"STUDENTS' PERCEPTIONS OF THE ROLE AND UTILITY OF FORMATIVE ASSESSMENT FEEDBACK ON PBL TUTORIALS"

By

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Thesis presented in partial fulfillment of the requirements for the degree

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University of Stellenbosch

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December 2013

DECLARATION

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university for a degree.

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ACKNOWLEDGEMENTS

I am sincerely and heartily grateful to my supervisor, Brenda Leibowitz, for the support and guidance as well as for the most enlightening feedback experience of my life. I am sure it would have not been possible without her help. I am also very grateful to my very helpful and supportive co-supervisor Enoch N. Kwizera. Besides I would like to thank all the staff engaged in the MPhil HSE at the Stellenbosch University for the motivation and support and to the MBChB students at Walter Sisulu University who provided me great information resources. My gratitude goes also to my family, especially to my wife Mirta, for the caring support.

ABSTRACT

Introduction: The close interrelation between the processes of learning, assessment and feedback has been recognized and supported extensively in the educational field for many decades. The benefits of the feedback as a strong tool for facilitating learning have been corroborated by learning theories and educational research. The introduction of Problem-Based Learning (PBL) approaches to higher education programmes, especially in medical training, is a worldwide trend. The PBL approach to learning brings new perspectives to the specific characteristics and values of feedback on learning and the quality of learning and thus, more especially to the role of the tutor as learning facilitator.

Purpose: To explore the medical students' perception of the role and utility of the verbal feedback provided by the tutor to students during the PBL tutorial sessions; and the students' perceptions on how to improve the effectiveness of the feedback.

Methodology: This study used a qualitative and interpretive methodological approach. The qualitative data collection tool used was the focus group discussion. The study was conducted at the Walter Sisulu University in the Eastern Cape province of South Africa, where the faculty of Health Sciences has implemented the PBL approach for training. The research targeted the students in the third year of the MBChB program.

Results: Students' perceptions on the role of the tutorial feedback suggested that they strongly acknowledge its value: they see it as a tool for improving their learning skills and also as an enhancer of their learning motivation and regulation. The students also perceived it as instrumental in the modelling of programme-specific professional skills which would be required in their future medical practice. Students' expectations from PBL-tutors feedback are quite high and comprehensive regarding both the kind and the nature of the feedback. Students perceived that the imperfections in the feedback received during tutorial sessions were a source of emotional discomfort and a hindrance to their learning success. The students' need for clear, timely and regular provision of feedback, based on specific learning outcomes, was also highlighted. The participants' recommendations for improving the efficient use of feedback included the regularization of the feedback practices across the different tutors and an increase in the allotted time for self-directed learning in their schedule.

Conclusions: The results of this study support the need for a socio-constructive learning environment to ensure successful learning in PBL. Among other conditions, the harmonious provision of balanced, supportive and motivating feedback is a complement for the establishment of a learning environment conducive to learning. Similarly, students highlighted the need for highly skilled PBL-trained tutors, to enable them to self-monitor and self-regulate their learning, and ensure learning success via the facilitation and feedback.

Higher Education Institutions using PBL training must identify and address factors limiting the effectiveness of the feedback and the overall quality of learning such as increased staff workload, increased demand for resources and modularization of courses.

Recommendations: Higher education institutions using PBL training should address the need for training of tutors in the different aspects and practices of the feedback in the specific settings of the small group tutorial. External factors interfering with the effective use

of tutors' feedback should also be considered to minimize their negative impact on students' learning. A regular process of curriculum enquiry is required to ensure the constructivist alignment of the different curricular components and overall design as a condition for the successful implementation of PBL.

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CHAPTER 1. INTRODUCTION

Problem-based learning (PBL) is one of the most revolutionary forms of teaching ever introduced in medical education. PBL was first introduced in the 1960s' in medical education as a proposed solution to deficient clinical performance observed in students trained with the traditional method (Barrows, 1996). The traditional method of medical training used until then was based on the students' acquisition of content knowledge, which was then tested on context-free problems, thus relying mostly on memorizing content rather than on their professional applications. The traditional method was thus concentrating on producing knowledgeable professionals, but not preparing them to integrate and apply the acquired knowledge in their future professional practice (Barrows, 1996).

The PBL approach brought an instruction based on exposing the students to real-life problems relevant to their future professional needs. Such exposure is assumed to allow students to plan and conduct their own way of solving the problem by asking themselves a series of questions such as 'what do I already know?', 'what else I need to learn?', 'how do I achieve it?' and 'how do I know I have learnt it, the students are motivated?'. In consequence, during this process self-motivated and self-directed learning occurs (Schmidt, Rotgans & Yew, 2011).

During the last decades, a great deal of research has been concentrated in the field of student's learning. These theories have set the ground as strong advocates of the benefits of PBL to students' learning. Theories such as the reflective practice introduced by Kolb and further developed by Schön, the cognitive development theory of Piaget and the social constructivism theory of Vygotsky are recognized as the basic grounds which, combined, constitute the backbone of the PBL pedagogy (Savery & Duffy, 1995).

The most innovative principle of the PBL training is the postulate that the students' need to solve real-life problems, similar to those which will appear in their future professional lives, stimulates their own motivation to learn. In turn, the persistent motivation to resolve the learning challenges empowers them to develop a systematic approach to problem-solving. The students' development of their own method or technique to approach the solution of these problems constitutes a powerful tool they could use for the rest of their professional lives preparing them for further learning (Schmidt, Vermeulen & van der Molen, 2006). In

addition, the collective task-solving provides the social and cultural environment required for students to construct new knowledge and thus, to learn (Schmidt, Rotgans & Yew, 2011).

The socio-cultural premises inherent in these modern learning theories have brought the attention of educators to the different aspects of the whole environment in which these social interactions happen (Roff & McAleer, 2001). As a result, the influence of aspects such as the nature of student-student and student-tutor interactions, have gained more recognition with the introduction of PBL (Jamaiah, 2008).

The implementation of PBL training, as a constructivist learning method, has also led to innovations in evaluation and assessment practices with increasing value attributed to students' assessment by peers and tutors. The feedback generated from different sources during PBL is credited as regulator of students' learning. In consonance with the theoretical principles of PBL, the main feedback sources are the learners themselves, the environment and the human teacher (Irons, 2007; Jamaiah, 2008).

The student-centred, self-directed and goal oriented conditions of the PBL training have resulted in changes to the instructional functions of the teacher. Teachers, acting as PBL tutors, are no more the directive centre of the teaching and learning process. PBL tutors are rather responsible for helping students to keep track of learning issues relevant to the instructional goals as well as for scaffolding students' knowledge and assessing students' learning progress providing them with guiding feedback on their performance (Struyven, Dochy & Janssens, 2005; Hattie & Timperley 2007).

In the PBL context, tutor's feedback to students provides among other benefits the motivational support and guidance for improving learning. Thus, the quality of the tutor's feedback to students and its reception by the students, in the PBL settings, become key aspects for the learning success of the PBL trainees. Consequently, there is an increasing trend for educational institutions to place a lot of effort into the staff training on PBL (Murray & Savin-Baden, 2000) and into the evaluation of PBL tutors' effectiveness as seen from the perspectives of the institution, the staff and the students (Struyven, Dochy & Janssens, 2005).

The evidence accumulated in favour of PBL as an instructional method, is supported by the constructivist learning theories. This evidence has also had an impact on educational fields other than health sciences. Other careers such as business, engineering, medical education, science, social science, teacher education and some disciplines like aviation, kinesiology, and textiles, have also adopted the use of PBL training. Currently, PBL training has been

implemented, at least to a certain extent, by medical schools in all of the continents (Walker & Leary, 2009). One of such institutions, which have adopted the PBL medical training, in the African continent, is the Walter Sisulu University.

Walter Sisulu University (WSU) is a South African comprehensive university which has been offering a MBChB programme for more than 20 years using a community oriented, student centred and PBL approach. The community-oriented approach is defined by the engagement of the students in the MBChB program with the community problems and community contribution to the management decisions of the practice. Community oriented learning places emphasis on primary care and effects of health problems not only on the single individual but also on the community (Connor & Mullan, 1983, p18). Community-oriented primary care is a systematic approach to health care based upon principles derived from epidemiology, primary care, preventive medicine, and health promotion (Longlett, Kruse & Wesley, 2001).

The PBL approach at WSU uses the SPICES model described by Harden, Sowden & Dunn (1984). This PBL approach is student-centred, problem-based, integrated, community-based, systematic and includes electives.

The Faculty of Medicine at the former University of Transkei (UNITRA), in the Eastern Cape province of South Africa, introduced the PBL approach in the early 1990s'. UNITRA, the legacy institution of the current Walter Sisulu University became the African pioneer of PBL training. The first trainees of the programme graduated in 1997 (Iputo, 2005; Kwizera, Igumbor & Mazwai, 2005).

The MBChB curriculum at WSU has three phases: Phase I or "normal structure and function", Phase II or "abnormal structure and function" and Phase III or "clinical medicine".

The phase II or MBChB III at WSU is an intermediate level between the phase I (2 years of basic sciences) and the clinical phase (MBChB IV and V). In the first phase, the PBL approach to learning starts at the end of the first semester. The level of complexity of tutorial tasks increases along the progress throughout the phases. The MBChB III students arrive from a phase with a similar number of courses per year, but with a lower level of subject integration required. Following the three PBL semesters of phase I, the students move into a phase with four entirely new subjects, to be handled at a much higher level of integration.

The MBChB III at WSU stands in the middle phase of the programme and consists of eight independent courses; four of them resulting from the integration of the four main disciplines of the phase: anatomical and chemical pathology, pharmacology and microbiology. The

remaining courses of the phase, which are: Clinical Skills, Community Medicine, Community-based Education and Service (COBES) and Forensic Medicine, are taught separately and during the whole MBChB III academic year.

The integrated courses are structured in the form of four blocks of 10 weeks duration each. These courses follow a progressive sequence; they are examined independently before the commencement of a new block. All academic activities for these courses (tutorial sessions, practical classes, resource lectures and assessments) provide a common teaching and learning platform in which the main four disciplines are integrated.. The diverse learning objectives arise from a common case-problem.

The tutorial sessions are the predominant learning activity with two three-hour sessions per week. Feedback on tutorial performance (formative) is given to students every week by the tutors usually in the form of verbal group feedback. Tutors also provide to students a more formal individualized formative feedback report at the middle of the blocks and also at the end of the blocks, when the summative assessments are carried out.

MOTIVATION FOR THE STUDY

The tutors' analysis and discussion of academic results and evaluation of the MBChB III program have raised some concern regarding the difficulties presented by students in attaining a steady learning progress during the first semester and more specifically during the first block. Students have also reported similar concerns when providing their feedback on the program. A relatively higher rate of failure in the first block of the MBChB III as compared to the other blocks supports these concerns. This observation is somehow in contradiction with the fact that the MBChB III students have already been exposed to at least three semesters of PBL training in the previous phase. In addition, since the first block brings some level of revision of the basic sciences, it was expected to be rather facilitative. However, students take long to develop the efficient self-regulatory learning skills to improve their learning at this level, and they find it difficult to cope with the new load of integrated learning and resources to be handled in the process.

The faculty has placed a lot of effort into identifying and addressing the possible factors leading to the above concerns from the various perspectives of the process such as the learning environment, the workload, the implementation of the integration of disciplines and the formative feedback. Under these circumstances, the need for the present study emerged. The motivation for the present research grew out of an interest to investigate

whether the students appreciate the value and uses of tutorial feedback. The study also intended to investigate whether they could benefit from a tutor's intervention for improvement of feedback.

The intention of the present study was to gain a deeper insight into the conception and value that MBChB III students confer to the tutorial feedback they receive and the perception they do have about the quality of that feedback.

This study focuses on the verbal feedback from tutors to students in the context of PBL training in an undergraduate medical program. The relevance of the study resides in the translation of the findings into an improvement plan to improve the effectiveness of the tutors' feedback to students and the overall quality of students' learning.

CHAPTER 2. REVIEW OF THE LITERATURE

History of PBL

A variety of approaches to teaching and learning based on the new learning theories related to PBL have appeared in the context of higher education following the introduction of PBL in undergraduate medical education in the last five decades (Barrows, 1986).

One of the most recent approaches to be adopted by an increasing number of some higher education institutions and more specifically by health sciences education centres is problem-based learning. The pioneering of the PBL approach is credited to the Canadian University of McMasters in the late-1960s. However, two decades later the use of PBL approach was expanding into medical schools on all the continents. Other institutions, which adopted the PBL curricula around the same time, were Michigan State University in the United States, Maastricht University in the Netherlands, and Newcastle University in Australia (Barrows, 1996).

A wide range of different models of training based on PBL have also been implemented. Some are targeting individual learners; others target small or even large groups of students. PBL models also differ in the tools and resources used (Barrows, 1986). In general, the essence of the PBL approach is to promote the student-centred, self-directed and goal oriented learning using an enquiring approach motivated by problem-solving tasks. The tasks are specific to the instructional programme, presented in the real setting of application targeted by the programme outcome (or closely resembling it). It relies on a tutor support for scaffolding, but promotes students' independence to learn through reflective thinking and self-regulation of learning (Harden, Sowden & Dunn, 1984).

The principles of the PBL approach

The essence of the student-centred learning (SCL) is to place students at the centre of their thinking and to help them manage their expectations and be able to consciously and constructively design their learning paths throughout their higher education experience. SCL is an approach in which students determine what they need to learn; they derive the key issues of the problems they need to solve, identify their knowledge gaps, and pursue and acquire the missing knowledge (Barrows, 2002; Hmelo-Silver & Barrows, 2006). This approach has many implications for the design and flexibility of curriculum, course content, and interactivity of the learning process (Brandes & Ginnis, 1986, p12). Student-centred learning, as the term suggests, is a method of learning or teaching that puts the learner at the centre (MacHemer & Crawford, 2007, p.9; Boyer, 1990). With the application of an SCL

approach in higher education, there is necessarily a shift in focus from academic teaching staff to the learner.

The principle of self-directed learning (SDL) as defined by Knowles (1975, p.8) as “a process by which individuals take the initiative, with our without the assistance of others, in diagnosing their learning needs, formulating learning goals, identify human and material resources for learning, choosing and implement appropriate learning strategies, and evaluating learning outcomes”.

This principle has certain implications which were summarised by Hiemstra in 1994) as:

> (a) individual learners can become empowered to take increasingly more responsibility for various decisions associated with the learning endeavour; (b) self-direction is best viewed as a continuum or characteristic that exists to some degree in every person and learning situation; (c) self-direction does not necessarily mean all learning will take place in isolation from others; (d) self-directed learners appear able to transfer learning, in terms of both knowledge and study skill, from one situation to another; (e) self-directed study can involve various activities and resources, such as self-guided reading, participation in study groups, internships, electronic dialogue, and reflective writing activities; (f) effective roles for teachers in self-directed learning are possible, such as dialogue with learners, securing resources, evaluating outcomes, and promoting critical thinking.

Regarding the principle of the goal-oriented approach in PBL it is considered a "disposition toward developing or demonstrating ability in achievement situations" (Dweck, 1986). The goal orientation theory is a social-cognitive theory of achievement motivation which examines the reasons why students engage in their academic work (VandeWalle, 1997).

Even though each school has some differences in the model applied they all have some regularity. Barrows (1996) summarises the general characteristics of the problem-based learning model employed in the medical school which are: (1) Learning is student-centred, (2) Learning occurs in small student groups, (3) Teachers are facilitators or guides, (4) Sessions are problem-focused to stimulate learning, (5) The use of problems motivates the development of critical problem-solving skills and (6) New knowledge is acquired through self-directed learning.

Although the PBL principle has proved attractive mostly to educators seeking improvement in their courses it has been subjected to different interpretations and practices which in some instances are not aligned with the original principle. Such deviations have led to

uncertainties about the PBL efficacy. A detailed analysis of some of the different PBL practices against the original concept and practice has been published by Taylor & Miflin (2008). This report, based on such analysis, also provides some guidelines for the implementation of the PBL curriculum.

The recognition of the benefits of PBL, at least theoretically, by the educationalists has determined its growing implementation in higher education. One of the most relevant long-term benefits attributed to PBL is the development of critical thinking skills which enhance students' learning. In addition, since knowledge is acquired in relevant contexts it enhances learning motivation and knowledge recall. Also the repeated exposure to subsequent examples facilitates the recognition patterns and helps developing a routine to solve similar problems (Schmidt, Rotgans & Yew, 2011). In contrast with the acknowledgement of the theoretical benefits behind the theory of PBL, an analytical review of randomized and non-randomized research reports by Colliver (2000) reported that the results provided "no convincing evidence for the effectiveness of PBL, at least not to the magnitude of effectiveness that would be hoped for a major curriculum intervention". Colliver (2000) suggested that this contrast could have resulted from a mismatch between the educational theory and the research methods applied.

The obvious increased introduction and extensive implementation of PBL in higher education is rooted in its theoretical background. The theoretical foundations supporting the PBL principles and benefits define the PBL as a constructivist learning environment (Rogoff et al, 1995, p 45-65).

PBL and the learning theories

The main principle of the constructivist learning theory, as proposed by Lev Vygotsky, is that knowledge is a dialectic process. According to this theory, knowledge, at a given time, is only transitory and non-objective as it is internally constructed by the individual, during social interactions and, under the influence of cultural determinants. The discrepancies between the existing personal knowledge model and the newly perceived insights of the world, in turn, motivate the individual to search for new meaning. It is then, under culturally accepted forms of cooperative social interaction that the conflict is resolved; the individual's knowledge evolves and learning happens. Vygotsky's theory conceptualises as the zone of proximal development the sum of those tools and processes that are needed to enhance the learning. (Vygotsky, 1978, p 79-91).

Similar aspects have been introduced by the theory of developmental cognition by Jean Piaget, which essentially proposes that intelligence is not random, but a set of organized cognitive structures that are actively constructed through the adaptation to the environment through different stages starting during the infancy. Piaget's theory recognises the individual's autonomy regarding thinking and learning. This theory supports the PBL principle that students need to drive their own individual learning process thus nurturing their ownership of the process (Piaget, 1964).

Both of these theories regard the social interactions that occur within specific cultural boundaries, as the significant process in which the individuals create and develop their own knowledge. In summary, knowledge is individually constructed as a result of social interactions and so, changes in sociocultural interactions perceived by the individual would lead to the creation of new knowledge (Rogoff et al, 1995, p 45).

Another important contribution to the theory behind PBL, developed by Lave & Wenger (1991 p. 40), is the relevance of the learning activities in the construction of knowledge. Wenger's situated learning theory proposes that, the construction of valid and relevant knowledge requires a learning environment that is authentic and where relevant activities or practices occur (Brown, Collins & Duguid, 1989). This theory reinforces the importance of the selection of the activities used in PBL training as a determining factor in the overall quality and success of students' learning (Anderson, Reder & Simon, 1996).

In addition to the above theories, also noteworthy in the context of PBL, is the principle of reflective learning which is fundamental for the individual process of knowledge construction. According to Kolb's theory of experiential learning, reflective practice occurs in a cyclic sequence, which starts with the individuals' concern or feeling about their actions followed by evaluation of the good and bad about that experience, then analysing it to make sense of what happened, and finally reaching conclusions, exploring new alternatives and making a plan of action so that next time facing the same activity the outcome will be better (Kolb, 1984).

Systematic reflective practice by the learner leads to repeated reflective cycles. This theory, developed by Donald Schön emphasizes the importance of the students' conscious engagement in the reflection on how they learn, thus becoming aware of the possible alternative ways of framing the reality of the practice. Schön's theory, thus, also highlights the metacognitive function of formative assessment and feedback (Schön, 1983, p 128-167).

Assessment in PBL

The conception that students' learning occurs during an active, reflective and individually regulated process is the key to achieving high quality learning under the student-centred and self-regulated conditions of PBL (Savery & Duffy, 1995). The use of appropriate assessment feedback is the key to ensure that the new learning cycles will result in improvement (Pee et al, 2000).

One of the main factors influencing the student's selection of an approach to learning is assessment. It has been proposed that assessment provides students with the understanding of what is expected from them. Under the appropriate motivational influences, this students' perception of assessment can induce self-regulatory changes in the students' approach to learning as they feel the need to switch into a more efficient way of learning to warrant their academic success (Black & William, 1998).

The whole process requires not only the permanent and systematic reflective drive of educators to redirect the learning and teaching process according to the assessment results, but also demands the awareness and participatory engagement of the students in the process (Rust, Price & O'Donovan, 2003).

Theories such as the reflective practice, introduced by Kolb and further developed by Schön, the cognitive development theory of Piaget, and the social constructivist theory of Vygotsky, are recognized as the basic grounds which, combined, constitute the backbone of the PBL pedagogy (Savery & Duffy, 1995).

The increasing acceptance of these theories by philosophers and educators and the growing evidence of the improved learning associated to PBL training have led to the extensive adoption of PBL approach in many educational fields. In the case of medical education, the introduction of PBL training has reached such a generalized level that currently it is considered the leading pedagogy. After its introduction in the 1960s the PBL method has slowly, but largely, replaced the old traditional training method on such a scale that PBL has nowadays become the norm in medical education. This paradigm shift, due to the intrinsic nature of PBL, has also had some implications for the associated assessment practices. (Vernon & Blake 1993, Walker & Leary, 2009)

The close interrelation between the processes of learning, assessment and feedback has been recognized and supported extensively in the educational field for many decades (Barrows, 1996).

The changes observed in the last decades regarding the student's learning philosophy have also been accompanied by the emergence of a variety of innovative teaching-learning methods and the subsequent concurrent changes in the notions and methods of assessment and new values also attributed to assessment feedback (Gibbs & Simpsom, 2004).

Black & William in 1998 proposed that according to the purpose intended for the assessment there are mainly two principal types to be distinguished: formative and summative.

The formative assessment (also known as process assessment or assessment for learning) gathers information regarding the teaching and learning process for the purpose of providing a guide to rectify and improve the learning process. It is meant to induce the gradual changes needed to attain a specific learning outcome. The main use of formative assessment is "to guide teaching and learning and not to give final marks or grades" (Taras, 2001; Black, 2004).

On the other hand, summative assessment (also known as product assessment or assessment of learning) rather pursues the assessment of a final product of learning and teaching endeavour. It is meant to describe the student's achievements in a specific learning unit. As it is usually utilized by the educational institution for official action/decision on the student's accomplishment of curriculum outcomes and it is officially and permanently documented in the student's records (Pellegrino & Chudowski, 2003, p 143).

The goal in PBL training aims at the process of learning and the development of learning skills. Thus, assessment in PBL differs considerably from the traditional non-PBL method (Ward & Lee, 2002). Assessments in the PBL settings require a relatively complex approach which considers not only the learning as knowledge gained during the development of a task, but also the student's performance as the knowledge gained by repeating the tasks (Albanese & Mitchell, 1993).

The role of the PBL tutor

An important characteristic of the PBL instruction is the switching of teacher and student roles: students become the drivers of their own constructive learning process and the teacher's role switches to providing guidance and scaffolding the students' learning (MacKinnon, 1999; Entwistle, 2009).

Since the students' learning skills, in PBL, are expected to emerge from a systematic and repetitive process of problem-solving, formative assessment plays a key role in guiding students in the attainment of the learning goals. In consonance, the feedback generated

from formative assessment in PBL is also considered as crucial for the learning success. (MacKinnon, 1999; Hattie & Timperley, 2007; Entwistle, 2009).

In the context of the social cognitive constructivism attributed to PBL there are various contributing components which determine the quality of learning. The sum of all these aspects has been conceptualized as the Learning Environment or Learning Climate (Roff & McAleer 2001). The main elements of the Learning Environment can be subdivided into three main facets: (1) the resources or physical environment such as available facilities, comfort and safety; (2) the intellectual climate which is supported by learning with patients, based on evidence and updated knowledge and (3) the emotional climate arising from the motivational support, the use of reinforcement and positive methods. The intellectual and emotional aspects are further supported by the level of motivation and engagement of both students and tutors in the process, the evaluation and assessment methods used and the feedback students receive from their peers and from the tutors (Genn, 2001; Jamaiah, 2008).

The values of feedback in PBL

Considering that feedback is a process that allows the student to evaluate their own level of attainment or performance in the assessment, it is not surprising that most educationalists attribute to it a tremendous value in facilitating the students' successful learning outcome (Struyven, Dochy & Janssens, 2005).

When students receive assessment feedback, in the presence of a high level of learning motivation, they are likely to re-assess and re-state their own conception of their learning process and develop the drive to engage in a self-regulatory action to improve their learning (Fish & Twinn, 1997; Biggs & Collis, 1982).

Considering students' pressures and demands, other not so traditional methods can be used; included among those are: (1) generic feedback in lectures and workshops referring to the common problems presented by the class instead to individual students; (2) students' self-assessment of their work guided by a provided list of assessment criteria; (3) students' steered feedback on what they identify from the assessment as having a particular need; (4) electronic feedback; (5) peer marking using clearly provided assessment criteria followed by peer feedback; (6) providing marking schemes and well-structured assessment criteria to accompany the initial feedback provided after assessment (Taras, 2001; Anderson et al, 2005).

Depending in the type of work being assessed and the overall learning environment a combination of different feedback methods can be used to make feedback more appropriate and effective. Constructive methods addressing the needs of the self, the peer and the group contribute to the different perspectives of assessment. Thus, they are more likely to contribute to formative assessment than the generic provision of marking criteria which are usually, though not exclusively, connected to summative feedback (Black & William, 2003).

A more elaborated conception provided by Taras (2002) defines feedback as the criterion-referenced indication of the difference between a student's attained level of outcome (goal, skill/competency) attainment or achievement and the set outcome (goal, skill/competency) that serves as a standard against which their attained level of achievement is assessed or measured. Thus, dealing with feedback requires awareness of both (a) the set outcomes and, (b) the assessment criteria for the specific learning unit being analysed.

Feedback can be given to students on both formative and summative assessments. A study published by Black and William (1998) presented a review of more than 250 articles by researchers from different countries providing strong evidence that formative assessment practices can have a strong impact on the learning and lead to improved standards. Since then, a lot of studies have addressed the optimization of the positive effect of the feedback on formative assessment on the students' learning (Black & William, 1998).

In the following years the concept of formative assessment was redefined as an extension of assessment for learning: "Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting pupils' learning… such assessment becomes 'formative assessment' when the evidence is actually used to adapt the teaching work to meet learning needs" (Black, 2004, p 10).

Rust, Price & O'Donovan in 2003 identified and described some aspects strictly required for formative feedback to be effective for improving students' learning. Among them were:

(a) To be given shortly after the assessment allowing learning connection to assessment.

(b) To be critical but supportive to learning and encouraging confidence.

(c) To be directly related to learning outcomes and assessment criteria.

(d) To show respect for diversity and individuality, not directed at the student but rather at the student's work.

(e) The students should be aware of the purpose and use of the information when receiving it.

The feedback on assessment is not only considered a beneficial tool for the individual learner's improvement but an effective tool for the continuous improvement of the standards of educational institutions when used in a reflective manner by both educators and students. Reflection implies systematic, critical and creative thinking about action with the intention of understanding the roots and processes (Fish & Twinn, 1997). The growing body of evidence accumulated in support of the positive institutional impact of the feedback process has led to its mandatory inclusion and definition of the standards for feedback for higher education institutions (Sohail, Daud & Rajadurai, 2006; Benedict & Ddembe, 2009).

According to Taras (2002) effective feedback to students on their performance can be given in a variety of ways. The types commonly used are: (1) the written feedback on students' individual work and (2) the verbal feedback either to individuals or groups of students (Taras, 2002).

The effectiveness of feedback depends not only on the external factors but also on some internal mediators brought into context by the complex nature of the learning process (Black & William, 1998). Two important aspects to consider for the effect of the formative feedback are its kind in terms of content or function and its quality or nature in terms of timing, clarity, complexity, language used and affectivity evoked (Hattie & Timperley, 2007) .

Regarding the purposes of formative feedback, Black (2004) recognized two main types: directive and the facilitative feedback. Directive feedback is more specifically related to the knowledge required in relation to the instructional goals whilst facilitative feedback is rather providing suggestions to guide students on the strategies used to attain those goals.

Narciss & Huth (2004, p 181-195) proposed a more detailed conceptual framework for formative feedback by identifying the main three elements of the process: the instruction, the learner and the feedback. This framework further separates the three domains brought to the process by the instruction: (1) objectives, (2) tasks and (3) errors. From the learners' perspective these three domains correspond with (1) their prior knowledge, skills and abilities, (2) their objectives and (3) their motivation. They further propose that formative feedback provides the interconnection between the learner's domains and the instructional domains. The three elements of the formative feedback linking those domains are: (1) the function, (2) the concept, and (3) the presentation, respectively.

Within this more structured conception the content of the formative feedback addresses both the evaluative and informative aspects. Depending on the function or intended response it could be cognitive, metacognitive and motivational.

The strategies followed to present the feedback are also important influences on how feedback is valued and used by the learners. The presentation of the feedback accounts for aspects such as the timing, the wording, the schedule and the clarity (Hattie & Timperley, 2007). The effectiveness of the formative feedback to students from PBL tutors requires the appropriate balance between these three main components as well as the students' awareness of their presence in the feedback (Hattie & Timperley, 2007; Walker & Leary, 2009; Weaver, 2006).

The PBL-tutorial assessment involves a diverse set of aspects and tasks with different levels of complexity. It includes the type and depth of knowledge and the association of different discipline-based elements brought by the cases. It also expands beyond knowledge to include social interactions such as: the ability to work as a group and contribute to group learning, the identification and use of a systematic approach to solve specific tasks and the supportive, tolerant and ethical approach to psychosocial issues (at both levels: team work and patients). Other skills also assessed in PBL-tutorial are the appropriate use of scientific terminology and learning resources, the ability and readiness to identify and target new learning issues. In a higher level of complexity, students are also expected to show deeper levels of understanding by being able to make diagrams and maps to summarize and integrate complex phenomena (Albanese & Mitchell, 1993; Hattie & Timperley 2007).

The review of formative feedback by Hattie and Timperley (2007) proposes a classification into four different types according to the level at which feedback is directed. These four categories are: (1) feedback about the task; (2) feedback about the processing of the task, (3) feedback about Self-regulation, and; (4) feedback about the Self as a person. The lower levels of feedback are more directed to the task and benefit from quick corrective feedback. However, it is recommended that with increasing complexity of the tasks the tutor must provide a longer time delay in the provision of the oral feedback. The tutors' verbal formative intervention should be provided only when learners have had the sufficient time to go through the needed reflective thinking that could be associated with reflective learning. In addition, this postponement of the oral feedback during the tutorial provides time for the students to attempt the solution of difficult problems on their own, preserving their motivation for empowerment with the development of learning skills and strategies of their own and thus earning their self-competence.

Due to the relatively complex nature of the PBL tutorial tasks addressed by the PBL tutorial, it has been recommended, that the timing for providing the oral feedback to each specific task achievement should be carefully considered at the discretion and expertise of the tutor (Kember & Wong, 2000).

Black (2004) advocates the beneficial effect of providing formative feedback that has a balance of both negative and positive components. The negative component provides guidance on issues needing correction whilst the positive feedback provides motivational support for the learner to engage in tasks to improve. Hattie & Timperley (2007) further suggest that the beneficial effect of accompanying negative feedback with a positive one increases with increasing level of complexity of the task assessed. Thus, when providing corrective feedback for very complex tasks it becomes crucial to combine it with positive feedback for motivational reinforcement.

Another important aspect to consider by the tutor providing feedback is that an effective PBL-tutorial depends on the synergistic action of four motivational spheres arising from the intrinsic principles of the PBL. According to MacKinnon (1999) these are: (1) Community: arising from the need for students' active, reflected and self-regulated learning shared with the peers which the tutor should encourage and respect; (2) Ownership: referring to the students' need to own their ways to solve and handle a with certain independency from the tutor, to enjoy their own learning development; (3) Relevance: referring mostly to students' need to develop clinical reasoning skills, working with actual cases or at least good quality cases they can feel as relevant for their future. This is the most relevant for PBL as it is the one directly related to the future profession; and, (4) Empowerment: referring to their intrinsic need to face challenges to develop a sense of competence.

A detailed typological classification of the feedback by Tunstall and Gipps (1996) describes the valence of the feedback according to the content expressed. The valence is regarded as positive in the presence of comments on what the student has done well and its function is mainly motivational. On the other hand, negative feedback refers to aspects that require attention as well as the suggestions on how to improve them. Negative feedback plays a role in promoting reflection and metacognitive development in the students. The combined presence of both negative and positive valences when conveying the feedback is highly recommended to enhance motivation and help students to get insight into their learning and plan their improvement (Black, 2004; Hattie & Timperley, 2007). Another important suggestion derived from the typological analysis of the feedback by Tunstall & Gipps (1996) is the evident benefits of providing feedback that is descriptive in nature rather than evaluative.

Providing descriptive feedback is more likely to be perceived by students as a valid reflection of their specific level of goal attainment. This at the same time gives them motivation to engage in critical reflection on their performance. The motivation generated in the process makes it more likely that they will consider the feedback suggestions received as possible ways of improvement (Weaver, 2006).

The complexity and specific principles of the PBL training demand a lot of skills on the tutors to be enabling (Murray & Savin-Baden, 2000). It is advised that faculties ensure that tutors in PBL programmes are trained on the regularities of supporting this special learning process and specially to be trained on providing oral feedback during tutorials. It is recommended that in each specific teaching setting the tutor makes his/her own assessment and carefully chooses when, how and to what extent to provide feedback to the group and/or to the individual members.

The tutors are expected to act as consultants and cognitive models to support scaffolding and learning. However, tutors' are also expected to ensure that the learning activity remains student-centred, self-directed and based on cooperative-learning. Preserving that kind of motivational learning environment is essential to enable students' learning (Savery & Duffy, 1995; Schmidt, Rotgans & Yew, 2011).

The attributes of the PBL feedback

The benefits of formative feedback on students' learning have been extensively described by theoretical analysis and experimental research in the literature (Black, 2004; Irons, 2007; Hattie & Timperley, 2007). However, the effectiveness of this feedback is dependent on various attributes which determine how it is perceived by the learners. Such components include: the focus, the clarity and specificity. A feedback message that is not clearly understood by the learners has absolutely no positive value and it is more likely to create stress and confusion to them (Sadler, 1989; Black & William, 1998). The negative affect emerging from unclear feedback is considered to be detrimental to the students' motivation (Young, 2000).

A similar effect has been described regarding the tone of the communication when providing feedback. The tone of feedback could be perceived by students as an assertion of domination or intimidation by the tutor. Thus, the use of affective language constitutes another important factor influencing the effectiveness of the feedback via emotional regulations on the learners' motivation (Johnston, 2003).

An additional aspect requiring consideration when selecting the strategy for the provision of feedback discourse is the selection of the audience to be addressed (Johnston, 2003). Since PBL training is based on group problem-solving for collaborative learning development, the feedback provided in terms of the task and the task processing should be given to the group, as it is commonly beneficial for all members. However, when there is a need to address the regulation of the learning process of an individual student, the educators are expected to recognize the most appropriate audience for the purpose. When required, feedback provided to individual learners is expected to facilitate the tutor-student rapport allowing a more participative interaction and increasing the effectiveness of the process (Hattie & Timperley, 2007; Johnston, 2003).

The effectiveness of the timely and helpful assessment feedback provided to students by an educator depends on how students receive and respond to feedback. This dependant relationship is even more significant under the current trend in higher education towards a more student-centred approach and ultimately depends upon the student's conception and interpretation of the feedback (Biggs & Collis, 1982). Bevan et al (2008) in a qualitative research at the University of Leicester found that students have difficulties in understanding the academic views expressed in the feedback and students do not recognize their involvement as a partnership but rather as an institutional process. The results of the study by Bailey (2009) were similar with students' sometimes not being able to understand the criteria and language of feedback.

Taras's research (2006) also found that learners in higher education were not enabled to use the assessment feedback effectively when the value of feedback was not completely understood and appreciated by both the educators and the students. Low levels of satisfaction in undergraduate students regarding the guidance received in using feedback and the utility and transferability of the feedback received have been reported by MacLellan, in 2001, and by Scott, Badge & Cann in 2009.

Weaver's research (2006) also showed students' concern about the high variability of the feedback practices by their educators leading to students' loss of motivation and misinterpreting the feedback content.

In summary, acknowledging the theoretical foundations of PBL as a social constructivist learning environment is important for understanding the roles, attributes and implications of the participating components. In the settings of PBL the tutor's feedback acts as an external

regulator of the learning by providing students with the means, motivation and opportunity for the internal regulation of their learning. However, specific considerations regarding the content, the nature and the delivery strategies should be observed when providing tutor's feedback to ensure its effective use by the learners.

CHAPTER 3. METHODOLOGY

RESEARCH FOCUS

Based on the premise that a better understanding of the complexities of the feedback process as seen by the students allows the educators to gain a deeper insight of the process which could be translated into more effective feedback strategies, the purpose of this study was to probe the students' understanding of the feedback they received during PBL training.

The study focused on students who have already been exposed for at least two years to the PBL training (MBChB III). The focus was further narrowed to the students' perceptions of the purpose, value and utility of the feedback they received during the small group tutorial sessions and more specifically focused on the verbal formative feedback the students received from their tutors during these regular sessions of their program. It was also the intention of this study to gain clarity on the students' expectations of tutors' feedback and how they think it could be made more effective.

RESEARCH QUESTIONS:

1- What values do students confer to the verbal feedback they receive from tutors during PBL tutorials?
2- What barriers do students identify regarding their effective use of the tutors' feedback?

RESEARCH DESIGN

The major interest of this research was on the students' perceptions of different aspects of the tutorial feedback. Thus, a qualitative approach, as described by Maree & Pietersen (2007, p 156), was used to explore as deeply as possible the whole range of students' views, reasons and details about the researched issues.

Focus group discussion was selected as a research tool since there was a need to obtain qualitative data at a deeper level than can be obtained by questionnaires, and also because it promotes the engagement of participants in the discussion in a free manner allowing the researchers to identify patterns of intensity, extensiveness, discrepancies and consensus in the group (Krueger, 1994 p 7-12).

The data collected was used to produce a deep description of the tutorial feedback as seen by the students. The identified students' perceptions were then discussed based on the particular context of this research and the existing theories and knowledge in the scientific literature to construct a meaningful interpretation of the reasons and processes conditioning them that could be then generalized to other similar settings (Guba & Lincoln, 1994, p 105-117).

In summary, the present study used a qualitative and interpretive methodological approach.

Target population and sample

The target population was the MBChB III students registered with WSU in 2009.

The class was invited to voluntarily participate in the study by enrolling for the focus groups. The MBChB III students at WSU have already experienced at least 2 years of exposure to a formal higher education using a PBL training approach. The study was conducted at the end of the second block of the MBChB III academic year.

The sample for this study was constituted by four groups of 7 students each (30% of the class). Each group was identified with a consecutive number and each of the participants was also identified with a number within the group during the interviews which was kept in the interview transcripts to be able to follow the individual contributions and engagement in the different threads discussed.

Recruitment of participants

Students' recruitment was based on voluntary participation following the dissemination of an open invitation to the whole MBChB III class. The sample selection was purposive to ensure representation of the whole spectrum of the target population. The theoretical framework and background of this research was not explicitly shared or explained to the participants to prevent them from experiencing suggestive perceptions (Babbie & Mouton, 2001). Learners agreed to participate on the grounds of collaborating with the faculty follow-up of PBL implementation

The heterogeneity of the members of each focus group was controlled in terms of gender, ethnicity and academic performances to produce groups with the closest possible similarity

to the study population to avoid any interfering effect on the coded perceptions during analysis and to ensure the credibility and transferability of the research results.

The focus groups were led by a staff member not directly engaged in the MBChB program to create a favourable interview environment that enabled the participants' authentic and open engagement in sharing and discussing their views (Maree & Pietersen, 2007, p 91).

Data collection tool

The focus group discussion was the research tool used in this study to generate the primary research data. Four focus group discussions were conducted in groups of 7 students to explore students' perception on the value, quality and utility the tutorial feedback. The focus interviews were moderated using a pre-elaborated guide to set the theme of discussion and to explore on the specific areas of relevance according to the objectives of this research.

The open-ended questions used to initiate the thematic discussion during the focus groups were:

1. What do you think feedback is?
2. What do you think is different between formative and summative assessment?
3. What do you think tutors intend when giving you feedback?
4. What do you think is different between good and bad feedback?
5. What did you like most about the tutorial feedback received during this year?
6. What did you dislike most about the tutorial feedback received during this year?
7. In general, when you were given tutorial feedback during the year, what did you do with it?
8. How can tutors improve tutorial feedback to students?

The information emerging from these eight questions was arranged into four thematic areas. The first three questions were intended to explore students' conceptions of feedback, to explore more deeply their ideas on summative and formative feedback and also their perception of the intention of providing tutor's feedback. The purpose of the next three questions was to explore the students' expectations and experiences of the feedback

received. Question number seven corresponded to the information regarding the students' views of the utility of feedback. The last question was set to explore the participants' recommendation to improve the tutors' feedback.

To initiate discussion, the participants were asked to comment about what they understood as tutorial feedback. Then, they were steered specifically into the area of the verbal feedback provided by tutors to students based on their performance in the tutorial sessions throughout the first and second blocks of the year. The matters around this specific type of feedback were agreed and set as the theme for the group discussions. Students were guided to comment and narrate their own individual experiences to provide the primary data for this study.

The average duration of the focus group discussions was 90 minutes. They were audio-recorded.

Data analysis and reporting

The audio-recordings of the focus groups were transcribed verbatim for text analysis. The transcribed data was then sorted according to their contribution, under the four *a priori* thematic areas corresponding to the questions in the interview guide: (1) what students say "feedback" is? (2) Did they find it useful of not? (3) When was it not useful? And, (4) What do they recommend to improve the feedback process?

The process of analysis used ranged systematically from the raw data to the data description and then to the interpretation. The text analysis was based on the approach described by Krueger (1994, p 127-142), consequently, the raw data from the focus interview transcripts was scrutinized searching for specific words used, their intended meaning, the context in which they appeared in the respondents' comments, whilst the relevance of the emerging codes was based on the frequency, extensiveness, intensity, and specificity of comments that surfaced during the group discussions and narrated experiences.

The thematic sorting was followed by the inductive coding of the information under each theme. The segments of text describing specific facts were then assigned specific codes considering their meaning or contribution. The contribution of each coherent bit of coded information was analysed within the contextual frame of this research to extract their phenomenological meaning or contribution.

Although the data for each participant was collected against the original criteria for sampling, they were not included in the reporting process because during the analysis, no specific pattern or trends appeared that would have made this necessary or meaningful.

The extracted information was described and arranged in the form of concepts, patterns, ideas, behaviours and incidents to convey the different aspects of the tutorial feedback as perceived by the students.

Lastly, the results of the analysis were described and examined in the context of this research and in the light of the existing theories and knowledge on assessment feedback to transmute them into a deeper and meaningful interpretation (Maree & Pietersen, 2007, p 103-122)

ASSUMPTIONS:

The following factors are assumed in this study:

1. This study assumes that assessment feedback (formative) in the PBL tutorial approach ultimately improves student learning and enhances students' quality of learning experience

2. This study values both the students and the medical educators as useful independent but interrelated components of the feedback processes.

3. There are numerous contributing components to the learning environment such as: evaluation, tutors' and peers' perception on feedback.

4. The study assumes that tutors are instrumental in the effective adoption and implementation of the formative assessment and feedback to students.

5. This study also assumes that feedback in the tutorial component is the most relevant and influential of all the assessment components in a PBL student-centred undergraduate programme.

DELIMITATIONS:

The following factors describe the frame settings of the study frame:

1. Although there are various aspects influencing the learning environment such as: evaluation, tutors' and peers' perception on feedback this study was limited to students' perception of tutors' feedback.

2. Although assessment and feedback have different implementation mechanisms depending on the phase of the undergraduate programme and the type of activity assessed this study was limited to the tutorial activity in a preclinical phase.

3. The data collection focuses on the experiences and perceptions of adult participants as expressed in their verbal communications through recall of tutorial events that generate reflection and discussion. Participants belong to a middle phase of an undergraduate programme with at least 2 years of experiential exposure to PBL training at a higher education institution.

QUALITY ASSURANCE / RIGOUR

Focus groups were used to satisfy our research purpose. Thus, the construct validity of the opening questions rather considered the wording as recommended by Trochim (2009). Validation of the leading questions prior to their use in this research was carried in a pilot study applied to a group of 6 MBChB II students of the 2009 class. All focus groups were conducted according to the interview guide and systematic step by step procedure was followed.

Inter-rater reliability:

The text analysis for the coding of transcripts was carried out by three researchers in an independent manner. The multiple coding strategies and interpretation of data were cross-checked by all the participating raters. The content of disagreements and the different insights were discussed and used in the fine-tuning of the coding frames as recommended by Maree & Pietersen (2007, p 113).

Each step of the data collection and analysis from the audio-recorded data, interview transcription, thematic sorting, inductive coding and description of results was independently documented and the resulting trail of evidence was verified for consistency and

conformability by at least one participant from each focus group as suggested by Carcary (2009).

ETHICAL CONSIDERATIONS

Participants' identity was kept confidential during the transcription of interviews. The group members were assigned a letter to identify their individual views and contributions in the threads discussed. Tutors directly involved in the MBChB III academic programme did not have access to any information collected during the academic year. The interviewees were invited to participate on the basis of developing institutional cooperation; no information regarding the purpose and expected outcome of the study was provided. The interviews were conducted by a research assistant who is not engaged in the MBChB programme at WSU.

Permission for recording the interviews was sought from the students prior to the start of interviews.

Approval from both the WSU and the SUN Faculty of Health Sciences Research and Ethics Committees' were granted for the study.

CHAPTER 4. RESULTS

This chapter has been structured to answer the following questions: (1) what students say "**feedback"** is? (2) Did they find it useful of not? (3) When was it not useful? And, (4) What do they recommend to improve the feedback process?

1. Students' conception of tutor's feedback.

The focus group discussions were initiated with an invitation for each of the participants to share their views on what they understood by feedback with the purpose of setting out the topic of "tutorial feedback" as main theme for discussion. The definitions provided varied in terms of extensiveness, and structural level of complexity. An example of a very simple view was defining feedback just as: *"a set of recommendations for improvement".* Other more extensive definitions included the object of the feedback regarded as the individual student and/or the tutorial group; the association of feedback with some kind of assessment exercise; and bidirectional tutor-student interaction:

> *"[Feedback] is an assessment based on the learning in the activities we are doing in tutorial rooms"*

> *"[Feedback] is an exchange of information between the tutor and the students concerning what or how the tutorial session should be ran and how it can be improved… it should help the tutor and the students both in increasing the efficiency of the tutorial sessions and how much the students would get from the session"*

When defining feedback most students included their perceptions of the possible outcomes of the process. Their views about the object of improvement ranged from relatively vague scope such as "to improve our learning" to a much broader idea including the motivation for improvement of tutorial performance from different angles such as: knowledge integration, individual and group learning process and development of professional skills, for example:

> *"Tutorial feedback is the assessment of individuals in the tutorial on whether they contribute, their understanding of learning issues, their understanding of medical terms and usually I think some tutors can use it to motivate students and to try to guide them on how to go about their learning or how to improve on their individual skills, and learning or time management."*

Although some students defined the process only in terms of group improvement or informing students of how far had their performance been from the expected outcome, the

majority actually stated some individual benefits in terms of monitoring and improving learning process. However, some participants would just see it as a *"one-sided process" where tutors "according to their own personal preferences would talk about things which they feel that need to be improved"*. Students felt that this kind of unilateral feedback process was more related to the summative side of assessment rather than having any direct applicability to their learning in these situations, when they did not feel they were actively participating in the process. They did not confer any learning benefit to the feedback received only this way from the tutors. During the analysis of the individual contributions it was evident that those students who were not fully satisfied with the feedback received as narrated by their experiences were the ones with the views that feedback was *"just something that the tutors have to do"*; they would not define it in terms of benefits for them but rather in terms of isolated actions taken by the tutor.

2. Students' perceptions of the value and utility of tutor's feedback.

The codes obtained for the students' perception of the purpose of feedback during the text analysis were:

- To make students aware of their strengths and weaknesses
- To provide guidance on addressing weaknesses
- To foster student strengths
- To boost student confidence
- To motivate student learning
- To improve student professional skills
- To facilitate student academic progress/success

The data showed that most students attribute beneficial effect to tutor's feedback in terms of improving their learning. Participants commonly associated receiving tutorial feedback with *"improving tutorial performance*" which was commonly referred to as: *"to help us to work on our full capacity"*; more specifically by decreasing their weaknesses, improving strengths and developing some new skills. The scope of the benefits from feedback as seen by the students reached up to the level of the improvement of overall performance and academic results:

> *"The tutor tells us on how we've been performing during the tutorial as a group firstly and also as individuals and also may help us or point out aspects of the work that we may be lacking and to help us improve in the coming tutorials."*

Most students also considered feedback as a valuable guide for them to improve because it was provided by their tutors based on their own deeper knowledge and wider experience.

It was also the students' perception that the improvement generated from the tutorial feedback had a wide range of valuable effects which included reinforcing students' confidence, developing group and individual learning skills, improving group dynamics and teamwork capacity, as well as the development of higher level of social skills relevant to the medical profession.

According to students' narratives on their experiences using the tutor's feedback, when they received it they tried to understand it, then if they found it to correspond to the expected outcomes and it was conveyed to them appropriately they were likely to consider it as valid and attempt the changes suggested by the tutor.

Most students agreed that getting balanced, positive and negative, formative feedback from the tutors was likely to boost their confidence mostly in two ways. The first one was by encouraging their feeling of achievement for the things they were doing well; and, on the other hand, by feeling that *"someone cares or looks after [them]"* when signalling the areas on which they could improve.

> *"The main objective [of the feedback] should be to construct on the student an also to increase the nature of the relationship amongst students and tutor."*

Some students supported this view with narratives of their experiences of using feedback in the second block, on skills acquired from the tutorial feedback received in the first block. The narrated experiences showed that students tended to regard the processing skills developed via tutorial feedback as most likely to be applicable in their future professional lives.

> *" a good feedback, for example first block we were given a lot of feedback guidance, and even some of them we still use them now, for example: in the case of integration we cannot read [a discipline] and learn it and then read [other discipline] and learn it, we have to learn something that is related from the disciplines, for the same thing, so, that really worked for some of us from feedback, also we learn to try to make diagrams to help, so a good feedback can make things to happen for us".*

Students acknowledged the benefits of tutorial feedback as a way to mould their skills to handle the social interactions in order to transform them into future team workers within the settings of the health care services.

Students perceived, in general, as "good" or "positive" feedback, that which met their expectations as a guide for improvement, even though it addressed their weaknesses as seen from the tutor's perspective.

> *"We don't expect tutors just to say "you are doing well" or "you are not doing well."*
>
> *"If the tutor tells you 'you are bad in [a discipline]' you cannot change your ways; it is not specific."*

A common view shared by the students was that good feedback is the one meeting their expectations in terms of content and presentation thus bringing them the motivation to take some actions for improvement.

Moreover, students expected to receive some feedback as encouragement from the tutor when they manage showing improvement in response to the tutor's feedback either in the form of verbal acknowledgement or as non-verbal cues. Students felt that this kind of feedback from the tutors when given in a timely manner was helpful to reassure them about their own individual learning progress.

With regard to the audience of the feedback, students acknowledged the need and benefits of receiving group feedback to guide collective performance which was seen by them as: *"appreciating the performance for positive reinforcement and also to note the shortcomings of the group, so that you can work as a group towards those shortcomings"*

The need for tutor feedback on group processing in the learning environment of PBL, where knowledge construction requires the collaborative interaction of the group members, is also essential for the coaching of the sociocultural relationships to enable group learning. Thus, it helps the group to keep the control of their own collective learning in community not only with other students but also with the tutor. In addition, it provides the grounds for the tutor to guide the development of specific social skills required by the medical profession such as the sense of teamwork, the understanding, respect and tolerance for social and cultural differences and collective attainment of patient well-being.

However, they also perceived the need for single learners to be individually addressed in the tutorial feedback not only for encouragement but also for guidance on specific areas where

they are “underperforming” as a mean to enable their improvement for both their personal and collective benefit.

The participants also felt that good feedback was likely to help them to find systematic and effective ways of approaching learning problems which they were likely to encounter in their future professional practice and “even forever”.

In the context of the utility of the tutorial feedback the strongest use of positive and negative feedback was referring to their content as positive or negative messages. Learners used the term “constructive feedback” for the one they found to have a useful message which could be positive and negative. Destructive feedback was used to describe feedback where there was no intention to help the student. What they repeatedly described as positive feedback implied a balance of both student’s strengths and weaknesses, communicated in a tactful manner conducive to acceptance and accompanied by specific guidance on how to improve the signalled weaknesses and how to make the best out of their strengths:

> *“A good feedback is a constructive feedback, something that would leave you knowing where is your learning deficit, and where you should learn more, it doesn’t degrade you, it is understanding, it’s that attitude that you can grow up after it, not the attitude of doubtful and stressing.”*

This kind of encouraging feedback they believe provided motivation and guidance for improving their learning skills. On the other hand, in the same context of utility of tutorial feedback, students perceived “negative” or “bad” feedback as that which, due to inconsistencies, they were unable to translate into any benefit:

> *“Even though we are aware of our responsibilities a bad feedback will not provide any means of making the responsibilities, they will just pile the responsibilities so that you have nothing to do honestly”.*

The provision of this kind of “bad feedback”, as seen by students, also induces negative emotional responses and makes it less likely for the students to give any positive use to it.

> *“… the tutor pointing at a certain student in front of the whole class is a bad feedback, it happened to me for instance, I didn't feel like studying any more, I just got to think this tutor doesn't like me”*

> *“When you get bad feedback, the objective of the tutor of guiding you is lacking, because you get all those negativities on your head, there was this time when I got a*

bad tutorial feedback that I disliked and all I did was: I packed my bags I went home and cried".

The positive component of the feedback was valued as useful to reinforce students' motivation whilst the negative component provided the guidance on what and how to improve. The majority of students recognized the value of honest negative feedback to make them aware of their weaknesses and to be the most helpful tool to guide them for actual improvement:

"[Good feedback] can be a negative or a positive feedback… when we talk of positive we talk of …those strong points, we need to really maintain those standards. The negative feedback is actually the weaker points of the student; we need to actually improve on those weak points."

Another important attribute of "good feedback" pointed out by the students is its regularity and the proper timing. Students saw benefit in receiving feedback at the end of each tutorial session to let them to know how they were performing and to take action for improvement on daily basis rather than receiving it at the end of the case/week or after a longer period.

"Receiving feedback in every tutorial is important, we should know, we should not wait… you might take time to actually improve… however if you are been told each and every time you are having tutorial, it would be great, you can actually try improve at those weak points".

They also thought it beneficial to receive corrective feedback on important mistakes right at the moment they were detected. The delay in the correction of such deficiencies could unchain a sequence of processing errors making the tutorial unproductive.

In this regard they emphasized that good feedback should not only be given on a regular basis but it should also be timely. They expect to be stopped and corrected by the tutor as soon as the latter identifies an essential mistake or a fault in the processing to prevent them from further moving in the wrong direction.

"I think as soon as the tutor sees that our thinking process is not ok, it has not been productive, I think the tutor should stop the tutorial and then try and correct issues at the moment if they can be corrected"

"… so next time you never know how to come about because you see a student who started being expressing what you understand maybe if it was a wrong idea but the idea was not corrected"

Students also expressed the need to receive tutorial feedback that was not limited to group performance and interactions but which also addressed students' individualities and their repercussions for the tutorial process:

"… group assessment alone would not be that beneficial because perhaps it would just say 'the group did well' whereas some students were outperforming or underperforming … some of us may get lost in the pool of how the group is doing."

"Group feedback will let you assume you are on the right path but individual feedback could be important to sort of grade yourself… it could help now to clarify whether what you think is right, you are able to see the level of performance that you think you have… so this kind of assessment will help you to strive on those weaknesses you might have, that's between the two feedbacks".

The students who were satisfied with their experiences regarding the feedback received during the year valued it as helpful in improving learning during the tutorials and academic performance which they were still able to use in the following block and beyond.

The results also suggest that students acknowledge the transferable character of the learning skills acquired by them, based on their accumulated experiences during the feedback processing. Students perceived feedback as a source of development of systematic ways of approaching problem-solving tasks, which they are likely to continue using during the rest of their instructional learning; even in their future professional lives.

"once the feedback I got was like: "I can see you got something of information but you need to organize it so that you can retrieve in a relevant way" so I started doing from that block when I was going to study it worked for me, I don't actually memorize it, it has changed the way I am studying , now I try to organize things, for example when making hypothesis firstly I organize, so I think feedback can actually help and change the way you are as a person."

"…we were having problems in putting things together [the tutor] just showed us once how to do it and from there we sort of did it on ourselves for the rest of the block so, tutors re able to helps us put together things at least once and then we can carry on"

3- Difficulties faced by students when handling tutors' feedback

The codes identified regarding students' expectations from tutors' feedback were related to (a) the kind, given by its function or content, and (2) the presentation, given by the way in which the feedback message is delivered.

The students' expectations of feedback in tutorials were summarized by the following attributes they perceived when defining good feedback:

- Clarity and meaning
- Communicated in a friendly manner
- Timely and frequent
- Specific issues addressed
- Includes guidance for improvement
- Standardized for the expected outcomes measured
- Comprehensive (learning, knowledge, communication, integration, participation, cooperation)
- Individually tailored
- Truthful, interactive and participative
- Encouraging

The overall utility of the feedback as seen by the students seemed to be strongly conditioned by the quality of feedback received.

> *"Good feedback is sort of a positive reinforcement, it's constructive, it builds you and it shows you have a potential you can do better than this, so it motivates you to work harder and become a better when the point is been raised as if you can improve."*

When the feedback given to students was not formulated with clear wording that could be meaningful to them and that student was not given the opening to interact with the tutor during the feedback process so that they could understand the message delivered by the tutor, students experienced frustration. Since the communicative essence of the process was compromised they saw no benefit from that feedback, lead to the provision of feedback becoming a futile exercise.

Students concurred that when receiving feedback they would first try to find its meaning and then consider their possible agreement with the tutor's views. The students saw the tutorial feedback as discouraging in the absence of tutor-student interactive and bilateral exchange

to clarify the meaning of the feedback and / or to ventilate possible disagreements, and non-constructive criticism. In such cases, even if they managed to understand the tutors' discourse, they were not conferring any insight to the feedback and preferred to rely on peers' support and self-feedback rather than on a "dominant tutor":

> *"I think a feedback is when the tutor is giving their own subjective view about that particular student's performance in the tutorial. It is the overall assessment of what the tutor thinks of that particular person, student or group".*

> *"It becomes a problem when there is a disagreement on a feedback provided between tutor and students because some tutors do not take a students' disagreement positively… and that makes the students to become unable to express themselves properly".*

Participants also regarded as very important the way in which feedback was transmitted by the tutor to the students. They saw as good feedback *"when the tutor tells you in a polite way, because it facilitates students' understanding and thus motivates them to correct those mistakes".* Similarly, feedback not given in a friendly manner was seen by students as 'inappropriately delivered'. Students consider that when delivering feedback *"the most important thing is the approach"*; the way in which they are told. They felt that the use of an angry or intolerant style of expression could engender feelings such as "anger and stress". Students felt that this inconsistent feedback conveyed a lot of emotions which could completely nullify the validity and utility of that feedback.

Another important aspect to promote learners motivation is the ability of the tutors to enable the students' learning via problem solving-motivation throughout the case/problem that is required to achieve the Integration and application to promote the development of transferable problem-solving skills. The loss of the problem-solving perspective and motivation during the tutorials would rather promote surface learning and non-applicable knowledge resulting in poor IPA performance. This kind of approach would only benefit students in obtaining better marks in a reproductive level during the MEQ.

> *"I got the case of this tutorial you find you just go into learning issues but never do or understand the case and you just present learning issues. I just tried reading harder and I got the best marks in the MEQ."*

With regard to the manner in which the feedback is delivered, the students' perceived that both the lack of a verbal communication as well as the some non-verbal cues from the tutors could be associated to detrimental affective state as quoted in this example:

> *"In terms of communication… the most killing thing that affects the students is when they don't say anything but you just see it in his or her physical expression you think that tutor is not happy but tutor doesn't say anything".*

When invited to comment on the utility of the tutorial feedback students' views converged on the fact that the value they attribute to a specific feedback depends strongly on the way the feedback message is delivered to them:

> *"If you get bad feedback you are most likely to turn away from it and not use it, but it you get good feedback it gives you guidance and directions you are able to use it."*

Interpreting students' responses suggests that negative feedback or even the absence of feedback is not an impediment for them to still manage to improve. However, based on the different responses reported by the students, this kind of proactive response depends on their individual abilities to handle their emotional reactions and on their motivational strength.

> *"I am trying whatever positive there is in what the tutor is saying to me, because sometimes I feel even if they are harsh they are only trying to make me improve."*

Nevertheless 'sensitive' students may feel discouraged after receiving negative feedback or lack thereof and give up their efforts to improve.

By contrast, some participants used the term of "negative feedback" as a synonym of "bad feedback" to refer to they could not benefit from. Students who failed to understand the feedback or found it unfair or vague did not see any use for it and rather saw the process as a formality that had to be undertaken. The feeling of frustration from the students when having no chance to discuss or follow up with the tutor their comments when receiving feedback renders it completely useless for the students. Similarly, students expressed an inability to benefit from feedback that led to affective conflict by being delivered in a suboptimal mode. Students frequently reported a great deal of influence by the form of presentation of the feedback. They concurred that when "appropriately delivered" they are more likely to engage in reflection on the feedback comments and use it to improve. On the other hand, expressions like *"the tutors think they are trying to help but somehow it depends on how they say it"*, were commonly present as argument for the deleterious effect they acknowledged as arising from a feedback message that is conveyed in an unkind manner or language.

> *"…if the tutor is are saying to me that: 'you have been the worst student today, what is wrong with you?, did you read?", of course, it might push me but at the same time*

it is still going to put me down because it might be the case that I am trying hard but there wasn't much production on what I said in that tutorial"

"When the things are pulled in a harsh way like: 'you are going to fail', or 'you are not prepared' while you know you have tried your learning issues and you have tried by all means to understand… the only thing that you get is anger and stress but when the tutor tells you in a polite way to open the room to understand, you want to correct those mistakes."

"The feedback that has to be given, should not be narrow, for one, we should take also the other aspects of a student because we are not only academic, we don't only have academic aspect of like though it's the one that brings us together but there are also some other aspects to students life that can affect performance."

A similar effect was described by students in relation to unclear or subjective feedback since they cannot translate it into a plan for improvement. They also found it quite troubling when the tutor signals the specific aspects of the tutorial requiring improvement but without giving them any clues or suggestions on how to do it.

"Basically a good feedback is the one that will direct you as: this is what you are doing, this is how you are performing, this is what you can improve, you are doing well in this, you are doing poorly on this, and perhaps if you improve on this aspect you would be a better student."

The students thought that receiving positive feedback played an important role motivating them to work on improving their learning.

Students perceived as beneficial the feeling of achievement they developed from the acknowledgement by the tutor about what they were doing well. Participants stated the fact that during the trial of new approaches in response to feedback they commonly felt the need for this approving support and encouragement from the tutor as a way to validate that the changes they implemented were leading to improvement.

"Good feedback is designed to motivate the student and which doesn't only highlight the negative things; for example that 'you are good in such and such area' and then they tell you 'you can improve here and there' other than being mainly focusing on what is negative because then you have the doubt if you ever could do something good in the face of that particular tutor."

Thus, students' thought that bad feedback was when the tutor concentrated only on the student's weaknesses, not taking notice of their strengths; and also when the tutor did not acknowledge the student's learning progress in the subsequent tutorial sessions.

> *"I think one of the important elements when it comes to feedback is to monitor our progress, the tutors are supposed to monitor our learning process, individual learning process."*

One important students' view was that the feedback process should always cover both the positive and the negative aspects identified by the tutor; where the positive component plays a motivational role whilst the negative side provides the path for improvement. The lack of tutor's positive reinforcement to the students' responses to feedback was seen by them as discouraging. Students felt that receiving feedback which focused only on the negative aspects of their performance brings down their motivation for improvement thus limiting the effort they could invest in addressing the negative aspects highlighted by the feedback.

> *"Bad feedback I would say it's actually when the tutor is criticising what you are making. You feel worthless and even if you are trying your best the tutor is only seeing things which are going to make you feel like you don't want to try anymore and is decreasing your self-confidence."*

Another conflict described by students and also present in their narrated experiences was their loss of motivation when they felt that the expectations by the tutor, as provided during feedback, were unreachable due to excessive workload. Student concerns were commonly expressed as:

> *"I wish there could be a little bit of understanding from the tutor's side, knowing that our program is a 5 year program and it is so compressed such that we get to do a system that requires a lot of time which is too much and you find the learning issues you have to study."*

The emotional discomfort associated to the above situation was described by students as *"feeling frustrated"* and *"not been supported by the tutor".*

With regard to the workload some students felt that the effort they placed in their performance on the tutorial sessions was directly related to their academic outcomes for the IPA since both exercises involved similar skills. However, they also felt that presence of a written modified essay question (MEQ) paper as an end-of block assessment exercise required a deeper knowledge and different skills which also required their attention to ensure

academic success, thus creating an additional workload to the one already attributed to the tutorial sessions.

> *"The MEQ had also had bad impact on us, it has to be in either two ways either to helps us but not to demotivate us, because if it demotivates us then it doesn't help the purpose…"*
>
> *"I… am a student who may be thinking that I can be getting 58 from what you have seen but definitely there is a problem with me as a student in actually writing what I know, so you as a tutor should be showing some help"*
>
> *"The questions that I was actually answering in tutorial and I did excellent answers in the tutorial and all of the sudden when I have to write it down I am not writing what is correct…"*

Due to the different nature of the PBL tutorial and the written MEQ assessment used, some students find that the tutorial exercise alone may not be producing the best academic results for them.

> *"some tutors would give you a list of Learning Issues on Monday whereas my tutor wouldn't give me the list, we would derive some other issues which sometimes are not necessarily part of the case, so they will make you a great doctor but they won't make you pass the year"*
>
> *"in my tutorial group we were not doing the pharmacology and the chemical pathology then we did not get any feedback from tutor that either we were on the right track or we were doing wreck then we would see when we get to the MEQ that we were not doing anything in the tutorial"*

Participants also stated that when facing these situations they were more likely to switch to the more strategic approach of attaining at least a minimum standard of performance that could make them obtain satisfactory academic results instead of attempting deeper learning for understanding.

Students expressed the need for valid feedback that corresponds with clear expected outcomes. Not having clear the goals for the tutorial process, or feeling that the tutors' goal are mismatched with theirs is seen by students as an impediment for them to use the feedback received.

> *"[at the beginning of the block] tutor should tell me: 'I expect you to be competent in this and that', and what I should know as 3rd year student"*

"…I think all this tutorial assessment is very subjective, I think we need a memoranda of how things should go, what is expected from us, how things go, each tutor should know what to expect and what to ask".

"…those [tutors] who are heading the major disciplines should do some briefing with the other tutors as to the minimal expected in their disciplines for all students so that every tutor knows what is the minimal and we don't end up with some groups not going into some areas because the tutor didn't know, they should harmonize information for all groups"

Students feel that somehow the tutor is responsible for guiding them and letting them see the direction and the scope of the learning required. It seems to be also in the students' expectations that the tutor's feedback helps them with clues to the areas of more relevance in each problem thus helping them in demarcating the extent of knowledge required to solve a problem.

"... some tutors when giving the feedback they will just say: in pathology you are too shallow, they don't say in the feedback how far you are supposed to do in pathology or pharmacology, so if you still don't understand, try to get some explanation from your colleagues then I think that should be better"

"we have to do a lot of work and if I am doing my own learning I might be doing too much considered irrelevant of a subject, and maybe not irrelevant but not pertinent to this particular case, which leaves me knowing a lot about a very narrow aspect and also very little of the other things that I am supposed to know and then it's important for tutors to know and then point out that you should learn this and this and that, but this and that you should not, or you should not go too deep in certain things"

"I feel like the feedback the tutors give is bad because they say 'you were supposed to cover this organ during this week" when actually this organ will be covered in more detail in another block, I know it's an integrated system but you don't expect to go into details with regards to everything all at once"

Students also had the feeling that the goals set for the PBL tutorials were influenced by the tutors' personal views. Students' narratives insisted on differences in the depth or learning, guidance on processing and even the expectations from the tutors in the different tutorial

groups which were also experienced by the learning when changing the tutors at the end of the blocks. The following quotes highlight students' views on this issue:

> *"… first block we were given a lot of feedback guidance, and even some of them we still use them now. That really worked but in block 1 I did not received any feedback at all and I didn't do anything about it, I didn't know, so for me it was like: I rather see how the tutor does things and leave it".*

> *"…there are tutors that are dominant and when the students want to say what they want to say the tutor is always saying what he/she wants but most of the time the feedback is just: you need to participate more".*

> *"…in block 1 we use to get feedback in our tutorial and that was very interesting because our tutor would actually pin-point specific problems if there are any in a particular student and [the tutor] would actually specifically encourage that particular student to improve on that particular aspect and that was very motivating but then on the contrary in the other block the feedback was more of a judgment, and that sticks to you more than anything that you could change, and if it's bad from the start that means, for you, that tutorial will be bad until the block is gone".*

The majority of students acknowledged that only when they found tutors' feedback to be clear, valid, appropriately delivered and attainable, were they likely to engage in some responsive action. Nevertheless, some students described that in some instances even when they felt the feedback was not optimal such as the absence of tutor's guide for improvement they had still made changes when they thought the tutor's comment was valid and they could benefit from such change.

> *"When you get bad feedback, the objective of the tutor of guiding you is lacking, because you get all those negativities on your head, although in a personal basis some people would construct it and redirect it to positivity some would not be able and you say well as it is my dream to be a doctor let's try to continue trying to find positivity in life"*

Furthermore, students also expected the tutor to be skilled enough to recognize when there was a need to privately address individual members of a tutorial group to discuss specific issues. Students maintained that an individual approach in some instances helps developing student-tutor interactions and it also avoids the individual emotional discomfort that could be generated from dealing with personal feedback in front of other group members:

> *"Formative feedback should be given individually because sometimes tutors try to give you formative in front of the whole group and to tell the group that someone did not do well, I don't think is right because sometimes it encourages but sometimes it discourages you because now you are embarrassed in front of your classmates."*

Another issue identified is that students considered also as bad feedback, one that is too broad. Whenever the tutorial feedback did not bring up specific issues to be improved the whole process became meaningless and irrelevant for the students. In the absence of a clear pathway for improvement it commonly led to students' confusion and loss motivation. Furthermore, learners did not attribute much value to this kind of feedback as the they could not engage in any positive reflective processing on the tutor's comments.

Some students also described a demotivating effect resulting from receiving unspecific tutorial feedback which cannot be validated against expected outcomes since it is based on categories of performance such as "not doing well" or just using numerical marks to describe student's performance in the tutorial:

> *"When tutor gives feedback they should be specific about what they think we should do, they cannot just say 'you are too superficial' or 'you haven't done enough'. They need to tell us whether we need to go up to the molecular details or just know what would be important for the clinical years, they should be able to tell us what resources we use if we have a problem."*

Whenever tutor's feedback was vague or lacking the guiding recommendations for improvement; students felt the process was not only lacking utility for them but it was also leading to motivational deterioration which could result in students adopting a less demanding study and learning approach and to their switching to 'strategic' learning.

Students also describe the negative affective implications with feelings ranging from loss of motivation to frustration resulting from receiving feedback in which the performance of individual students was compared to that of the group or to the other group members; or they were only given a judgemental feedback of 'good' or 'poor'.

> *"the language or the words that are used by the tutor they may have an impact on the students attitude on the next day, on the next week, and that also contributes to how the students learn, for instance when the tutor said you are 'the weakest link, the weakest in the group'… how would that not have an impact?... we don't necessarily need some sympathy but we need some respect because you find that it has an impact…"*

> *"…you find that the feedback is not serving any purpose of improving or doing anything to the student more than it's labeling you and in a way it restricts the learning process in the tutorial because you find that most of the time if you have been named that as "you just speak from the air" next time you don't even want to speak"*

> *"… the tutor asked individual feedback, then everyone said: my performance wasn't good… and at the end [the tutor] said that 'the group was doing fine". But because everyone feels like their own performance isn't good, how can the group do well? so, it shows, I think, the tutors don't take it seriously"*

Regarding the components to be included in the tutorial feedback students expected the tutor's comments to be comprehensive by referring not only to the knowledge and its depth but also additional aspects such as level of attainment of integration and application of discipline-specific knowledge, communication skills, collaborative learning, contribution to group processing and appropriate use of medical terminology and learning resources.

> *"certain tutors have a preference for a certain subject they may give feedback only regarding that one subject and not holistically with regards to the entire curriculum"*

> *"… you find that the feedback is more of the constructive and also "supposedly" that it is on the terms and items that are on the assessment form as in: how do you, how the student uses the medical terms, and, how is the personal skills in the group, not only assessing you as an individual but also how did you relate to your colleagues"*

> *"Besides telling a student that they need to improve in certain aspect I think the tutor must also be able to help us out with what resources we can look at so if we are having trouble with pharm then the tutor should tell us: if you are having problem with a certain book then use this one instead, or they see you have a problem with [one of the integrated disciplines] or anything that requires basic science knowledge they should tell us that we should go back and read a bit on our physiology to understand the tutorials"*

Some students thought that the frequency and quality of the tutorial feedback did not follow specific standards across all the tutorial groups. Students' narratives showed that some tutorial groups received tutor's feedback with more frequency and regularity than others. Students also felt that they received tutor's feedback as a group more often than individualised feedback. In addition, learners found that the group feedback was sometimes concentrating on whether the tutors were satisfied, according to their personal expectations,

with the group performance instead of specifically describing students' level of goal attainment.

In this regard, students perceived that the expectations from different tutors at a given time were too different: *"…feedback, you know, sometimes the tutor confuses us as students because they have contrasting conceptions".* Students described the scope of these tutor to tutor differences in terms of: resources to be used, depth of knowledge to be attained and the recommended dynamics for group processing. Students concurred that such differences were also increasing the variation in academic results from group to group.

Receiving feedback that did not satisfy each and every one of the aspects they expected from 'a good feedback' was discouraging emotionally and retarded their learning.

Students felt that receiving consistent feedback regularly from the tutor was more helpful, reliable and more likely that they would attempt the improvement actions recommended by the tutor. The students perceived as consistent feedback the one that focuses on specific tasks and outcomes and provides guidance for improvement, but at the same time is delivered to them using a favourable and respectful tone.

During the same block some students were definitely satisfied with receiving what they perceived as consistent feedback whilst others were not satisfied since they felt it was deficient in some aspect. Students felt that there were significant differences between the feedback received by different tutorial groups within the same block as well as by individual students across the different tutorial blocks. In addition, some students attributed the feedback variations to different levels of tutors' training and expertise regarding PBL.

Students also sensed that sometimes the feedback views provided by the tutors were commonly focussing on the tutor's particular field of specialization and it was difficult for some tutors to guide students on issues from other disciplines. That narrow scope of tutors' feedback was also perceived by the students as a possible limitation to their own attainment of the discipline integration expected as a course outcome.

> *"it's important for the tutor to groom you in such a way that you know what are the important learning issues because you go and find out your own learning issues from the case and you struggle and then you go to next tutorial session and you get the shock of your life when you find issues you did not do…"*
>
> *"…you find that if you are in a tutorial with a pathologist tutor you are expected to know every details in pathology and then you find that you are been left out in the other disciplines, but you are expected to know them at the end of the block but you*

don't actually know them very well because you go trying harder on the tutor's discipline, so some learning deficiencies maybe tutor-induced".

"Some tutors would focus more in particular subject. That results in students being more developed and equipped in that particular area, right/ and less developed in the others… this makes it very difficult to integrate information when you are more developed in one field and not in the other, so I do feel that, equal focus should be given to all the disciplines that we do…"

The lack of regularity or consistency of the tutors' feedback was seen by students as an additional limitation to their timely adaptation to the deeper level of attainment which was expected from them when progressing from the second to the third year of the MBChB program. Students thought that this delay was risking their academic progress creating additional emotional stress and insecurity.

Two aspects were highlighted by the students in this study regarding the timing of feedback. The first one was related to the stronger need for feedback early in the academic year and the second one was related to the time for tutor intervention when guiding the group during tutorial sessions.

The need for timely provision of tutorial feedback as emphasized by the students in the context of this research could be accentuated by the modular structure of the MBChB program at WSU. The MBChB III program at WSU, in addition, is a transitional phase from the basic to the clinical sciences, which demands a deeper level of integration and complexity of tasks compared to the MBChB II. Both, the shorter duration of modular courses and the more intense workload of the MBChB III, could accentuate the students' feeling that successful learning is more difficult to attain during the first module of the year. Students identify the benefits of tutorial feedback for their learning and they feel a heavier workload for block 1. It is logical for them to assume that the earlier in the course they receive feedback in tutorials, the more it could facilitate their learning and academic progress.

"…in block 1 I did not get the feedback as how I was doing, until the end I was thinking I was doing well throughout the block, and only at the end I knew I was not".

"I didn't like most about the first block feedback was actually that the tutor would not give any feedback at all at the end of the session or if he gives any feedback it would be general about the progression of the group not about particular individuals and then we would not know whether we are performing to your best abilities or what the

tutor thinks, you already know that the group is fine, but you don't get feedback as a particular student".

"I was given the feedback on the daily basis after every tutorial, that was nice with me, and then it was really helping me to improve on daily basis every day when we're from the tutorial I would know maybe I have improved here or I still need to improve here"

Based on individual delays to develop an adaptive response, some learners feel that their need for orientation and guidance through consistent feedback could be deeper. Such effect has been described by Schmidt, Rotgans & Yew (2011).

Regarding the timing of the feedback on specific tutorial tasks, Hattie and Timperley (2007) described the benefits of different time intervals according to the type of task for which feedback is provided. These authors described the immediate provision of feedback to be mostly effective for the corrective disconfirmation of major conceptual errors and for simple tasks.

Furthermore, according to Deci & Flaste (1995) and MacKinnon (1999), the benefits of comprehensive feedback are not expected to increase by shortening the time to provide it after attempting the tasks; considering the different motivational goals associated to the PBL. Instead it could rather be detrimental to the students' need for challenging their own learning autonomy, intrinsic motivation and self-efficacy in solving problems. Hence, a quick feedback intervention would also prevent them from feeling the individual and collective joy of task-accomplishment. Therefore, it is possible that, at least to a certain extent, our students' perception of inadequate timing of tutor intervention could result from: (a) the intentional delay by the tutor to allow the students' metacognitive processing to solve complex tasks; (b) the learners' ignorance of the intention of the delay; (c) low motivation of tutor and/or students to actively engage in the tutorial processes.

There were two common groups of causes of low satisfaction with tutorial feedback in the current study; the first one was related to understanding what the tutors meant with the feedback given. The second group of dissatisfactions arose mostly from the structure or composition of the feedback which included: receiving only group-related feedback; receiving non-specific feedback, and not getting suggestions on how to improve on specific issues pointed out by the feedback.

In terms of affective responses arising from feedback, our students' views support the idea that 'inappropriate' feedback from the tutor could induce in them diverse levels of emotional discomfort thus interfering with their learning. Feedback limitations felt as inappropriate by the students such as: concentrating on negative aspects; directed to the self-person, using student's comparisons, and; disagreement with tutor's views with no frame for discussion, among others, were attributed to be responsible for inducing emotional distress. This adverse emotional state, as seen by students, was leading to their rejection of the feedback, loss of motivation and disengagement with tutorial process, which in turn, conduced to a less successful learning.

> *"feedback wasn't a reflection of what the group was doing, so it was always the case of : "the group is not trying hard enough" when as a group we felt we were really trying to make a difference, so it was really discouraging and I think when a tutor gives that kind of negative feedback to a group, honestly from the students' point of view we didn't do anything with it, we didn't take any initiative to do different or to do better because with us it was like: oh, we don't care anymore because our tutor doesn't care".*

Affective conflicts arising from inappropriate feedback practices were also identified in the present study.

In response to this conflict the learner is likely to switch to a more strategic and less-demanding learning approach resulting in a lower quality of learning, as supported by some students' narratives:

> *"we were frustrated, then all we did was to go and cram those big text books and go to tutorial and vomit them out there and we would go out without knowing whether you are correct or wrong"*

> *"…feedback was really very discouraging, and we would never get tips on how to improve, so for tutorials we went there for the sake of going and we vomited there what we got straight from the books, no application, no logic, nothing".*

The students' perceived as negative the emotional interference associated with receiving imbalanced feedback from the tutors.

4. Students' recommendations to improve tutorial feedback.

When prompted for recommendations to improve tutorial feedback, students proposed the following actions:

I. Standardization of the tutorial process and the consistency of the feedback for tutorials.

> *"…with tutorial in general I think the tutorial should try and be more like the same, sometimes I feel like the tutors didn't go the same place to like know how to run tutorials, some are right some are odd, different block and different tutors, some will go well but other won't."*

II. Intensification of the tutors' training regarding the values, attributes and expectations of students from tutors' feedback to ensure that it is optimally and consistently conveyed to all students across the different tutorial groups in every block.

> *"I'd like that they [tutors] go to intensive workshop and they know what the PBL is, so that they understand and then they convey it to us as students."*

> *"…if the tutors would be helped to understand what PBL is and were up to understand they could convey to us all what PBL is and everyone goes well."*

The modular structure of the course may put an additional pressure on students as they do have little time to master the discipline routines to ease the cognitive load and to structure their learning. Changing the course structure from a modular to a semester or year course could be beneficial in this context. Other curriculum design aspects such as the careful problem/case design are also crucial to recreate the future professional applications of the knowledge thus enabling the situated learning and the development of transferable learning skills (Lim, 2012).

III. Introducing an intensive "orientation phase" for students at the beginning of the MBChB III to enable their timely adaptation to the new setting.

Students based the latter recommendation on the following perceptions: (a) the MBChB III program requires a deeper level of knowledge and integration of four disciplines which are not only new to them but also are presented in the context of more complex problems to be solved; and (b) the modular structure of the MBChB III courses resulting in examinable

blocks of relatively short duration. Students felt that at the beginning of the year they required some time to identify the best ways to approach the integrated learning, to identify a new range of supportive resources and to identify the regularities of the discipline-based components. They felt that during the first few weeks of block I they were far from reaching the expected outcomes, as they had not yet development the needed skills. This adaptation delay was seen by students as responsible for a slower learning progress during the first block and thus they considered it as having a negative impact on their end-of-block academic results as seen in the following examples:

> *"Even though we all came from first year up until this year we are different people, some will adapt early, some will adapt later and some people I think were affected (referring to academic results)…because they were late to adapt, because they just didn't understand, which is something that could have been avoided if only they do introduction before we are actually in…so it's really important that we get that introduction."*

> *"'The beginning of the year it was so confusing…I think the first block is the most crucial of the block because you are starting on a new program,… you are not used to having to study 4 subjects at the same time and most of us we spent weeks trying to understand how to tackle the books, like maybe how to go about studying, you don't even understand what's going on, you don't even know what are you supposed to know."*

Based on the above arguments students suggested that receiving more intense feedback during orientation in the first block could help them to quickly succeed in the adaptation and learning attainment expected for the MBChB III program.

The identified perceptions from the students suggest that they do actually value the feedback as a tool for improvement, and that they recognize the different beneficial effects of the tutorial feedback and supports their next recommendation.

IV- Standardisation of tutors' expectations and objectives to be accomplished in the tutorial sessions.

> *"before we can get feedback there should be an understanding between the tutor and the students as to what the tutor expects from students because sometimes what a tutor might expect from one group is not necessarily what another tutor might expect,*

so I think there isn't an standardization of the expectations of tutors from the students, then in this standardization they can be more objective evaluating students"

"…also, for instance, one tutor may be more biased towards their own respective field, they don't concentrate on other fields, so it becomes difficult for us as students to evaluate or to be evaluated on how we perform on those other fields. I think for a week maybe the tutors should have a sort of workshop on what main topics we are going to concentrate for each subject so that they can have idea of what we should know about that specific case".

Regarding the students' perception of needing a more intense orientation phase before commencement of the course it could raise a question about the level of awareness and conscious engagement of the students about the principles and benefits of PBL. It is rather frustrating that, after at least two years of PBL training, the students feel the need for additional support from tutors rather than expressing more need for empowerment of their autonomic learning.

The exposure to new disciplines, as seen by the students, implies that the students need to learn systematic discipline-based approaches to construct their knowledge. In this learning interaction they feel that the tutor intervention is crucial to scaffold the discipline-approach to specific task solving. The students need some time with these scaffolding interactions to make their own sense of the disciplines' structures and approaches.

"… with the learning issues I had a problem. I could not see which one was pathology and which one microbiology, then I would go to the Pathology book while that was Microbiology and you find that when presenting microbiology it was inadequate, so it gave me a problem, it took me about 3 weeks to know"

V- Students' recommendation to increase the time allotted for self-directed learning in their weekly timetable.

This aspect seems to be reasonable considering two important aspects. First, PBL, as a constructivist learning approach, requires time for the learner to gather new information related to their previous knowledge, then to engage in critical thinking to modify the perception of the phenomenon and finally to validate it via socio-cultural interactions to result in their own construction of new knowledge. Secondly, the students exposure to four new

disciplines and more complex tasks in the MBChB III also increases the workload they face as compared to the previous year.

In summary, the results suggest that students have the general conception that tutor's feedback is a dynamic process of tutor-student exchange of information regarding student attainment of learning goals to improve students' learning. Students value tutors' feedback as a tool for attaining better learning by developing their learning skills which also helps reinforcing students' motivation, confidence and professional skills. Students' expectations of verbal tutor's feedback, as defined by their conception of what a good feedback should be, are related to its kind which was expected to be formative, descriptive and guiding but also to its nature in terms of meaningfulness, frequency, timing, validity, valence as well as to the manner in which tutor's conveyed the feedback message to students. The use conferred by students to the feedback received from their tutors was usually leading to some cognitive or metacognitive development by the students. However, it was also found that the use of tutor's feedback by students was ultimately conditioned by the overall quality of the feedback provided. Additional elements contributing to the efficient use of feedback were also identified as playing a role in the multifactorial settings of the constructivist learning environment inherent to PBL. Lastly, students recommendations are described; the most relevant being to take some actions to ensure that the tutors provide consistent feedback regularized across all tutorial groups and a more intense use of feedback in the beginning of the year to facilitate their adaptation and enable their academic success.

CHAPTER 5. DISCUSSION

Regarding the students' conceptualizations of feedback it should be noted that some students provided a limited definition of the feedback process that did not include its purpose, possible uses, and benefits. When following this selected group of students individually throughout the focus group transcripts, it was found that they were all somehow unsatisfied with the quality of feedback they had received in the semester investigated, as corroborated by their narrated experiences. Thus it was not surprising that they would not expand their concept up to the point of including the value of feedback. This finding is supported by Vygotsky's constructivist theory of learning (Savery & Duffy, 1995) which suggests that the students' perception of feedback corresponds to their individual representation which is built upon their experience of the exposure concerning tutorial feedback.

The students' narratives of their experiences of utilizing the tutor's feedback did not reflect a systematic approach to the processing of the information given as feedback. This interpretation could be influenced by the lack of factual evidence to confirm that the verbal feedback provided to them had been positively used and how had they done so. Another possible explanation is the huge variety of tasks and processes facilitated by the tutor at both individual and group level, in the very complex contextual environment of the program addressed in this research. In such a wide range of tasks it could be difficult for the students to distinguish them all as specific feedback experiences.

The results of this research suggest that student value the tutors' oral feedback in PBL as an important guiding tool for their learning development. The way students perceive the need, functions and elements of this feedback supports the role attributed to the PBL tutors in coaching and scaffolding students learning. These findings are consistent with current philosophical views of human learning according to which learning is a process that somehow involves knowledge construction. They are also in line with the theoretical background of PBL, essentially based on the promotion of the students' self-construction of new knowledge to be added on the previously existing one under the influence of culturally accepted social interactions (Rogoff et al, 1995, p 45-65). These perceptions also reflect that students acknowledge their essential responsibility for their own learning in PBL, conferring thus more importance to the learning process as a constructive event than to the amount and depth of resulting knowledge (Piaget, 1964).

The views expressed by the participants in this study regarding the different attributes of the tutors' feedback suggest their role as contributing elements of a common, yet more complex, constructivist learning environment. This complexity requires a continuous exercise of inspection and reflection to ensure that each component of the teaching/learning process is consistent with the underpinning of the PBL philosophy.

As suggested by the results of this research, the success of PBL depends on the appropriate implementation to be conducive to effective motivation resulting in the self-directed construction of knowledge by students. The process requires not only the appropriate tutor-student interactions, but also the appropriate resources to facilitate the process and the best-fitted course design to enable the learning process.

The tutor's role in PBL training as facilitator and role model requires a high level of interaction to enable students' understanding (MacKinnon, 1999; Entwistle, 2009). Failure to understand the meaning of feedback provided by the tutor would invalidate its use by the students and obstruct the facilitative function of the tutor. Thus, in the face of faulty student-tutor interactions, the students can only rely on their own and their peer's feedback to regulate their learning. As a result of the deficient tutor-student(s) communication the effectiveness of the tutorial process is reduced (MacKinnon, 1999; Hattie & Timperley, 2007; Entwistle, 2009).

According to Taras (2001) and Anderson et al, 2005) providing students with clear assessment criteria and learning outcomes is expected to help them to set their own motivational learning goals and at the same time to self-monitor and self-regulate their own learning progress. This kind of guiding information to students could be delivered by the tutors in the form of a criterion-referenced feedback against which they can match their learning (Taras, 2002). Considering its associated benefits, the regular use of such reference-based feedback practice is also recommended in the PBL settings. It is possible that, in the context of this research, the high variability of practices used for tutorial feedback in the different groups is perceived by the students as interference to their effective use of the feedback. Such variability would require the students to keep changing their processing approach to adapt and respond to the different practices, thus motivating their recommendation for feedback standardization. The negative impact of highly variable feedback practices on students learning has also been described, in a similar context, by Weaver (2006). Conversely, the use of some regular feedback practices could facilitate the use of a systematic approach for the interpretation and processing of feedback by the students increasing their efficiency. Albanese & Mitchell (1993) and Hattie & Timperley

(2007), suggest a higher efficiency of learning when knowledge is gained by repeating the tasks.

The negative effect of meaningless feedback on students could be explained by the theoretical base of PBL. According to the constructivist learning theory of Vygotsky, knowledge is individually constructed, based on the confrontation of the pre-existing knowledge and the new perspectives encountered by the learner (Savery & Duffy, 1995). This theory also assumes; that it is during the resolution of those conflicts that new facts are finally evolving into new knowledge. However, that resolution can only happen via social interactions and reflective thinking in a favourable sociocultural atmosphere. Since the PBL tutor is acknowledged to play an important role in enabling individual and group learning, it would be understandable that any limitation in the tutor-student and/or tutor-students communication could be unfavourable for learning (Entwistle, 2009).

Deficient student(s)-tutor communication has been described in association with the presence of a language barrier. In such instances, if one or even both sides of the social interactive pair have a deficient language construction or articulation it could be difficult for the counterpart to extract the meaning of the message (Green, 2009). On the other hand, communication requires not only language but also a positive social environment to enable the optimal bidirectional interaction. Such enabling ambience for communication could be affected among others by: the words selected, the tone used, the affective climate induced, the disposition to engage in friendly and respectful dialogue and the social-behavioural positioning adopted by the parties. Tutors' attitudes perceived by students as dominating and intimidating are more likely to lead to misunderstanding and unilateral feedback. (Hattie & Timperley, 2007; Johnston, 2003).

The efficient bilateral student(s)-tutor communication, in the social constructivist learning environment of PBL also requires both parties to consciously understand each other's roles, attributes and implications in the tutorial process (Hattie & Timperley, 2007; Entwistle, 2009). The students' recognition of the tutor as external regulator to their learning is helpful for them to understand feedback and to process it. Similarly, the effectiveness of the tutorials also demands a lot of skills from the tutors to provide suitable feedback (Murray & Savin-Baden, 2000).

All these elements interfering with the effectiveness of the communication would affect not only the understanding of the feedback but could also prevent students from interacting with the tutor, thus allowing the flow of information in a single direction.

The students' perception of dissatisfaction with a unidirectional feedback process has been recognized more specifically in the context of PBL training as a serious restriction to the students' learning development and motivation. MacKinnon (1999) in a study of core elements of students' motivation in PBL corroborates that the motivation of the PBL students requires the presence of a social sense of community. This sense of community encompasses feeling comfortable not only with the student-student interaction; but also with the tutor-student relationships.

The students' relationship with the tutor needs to be interactive for them to perceive it as supportive. Unidirectional tutor to student feedback is usually seen by the students as controlling instead of supportive and it is not likely to allow the resolution of disagreements from both parties. The effects of the one-sided feedback and tutor domination in the PBL settings has also been described as interfering with the students' sense of ownership of the tutorial process and their need for autonomic regulation of their self-motivation for learning (Biggs & Collis, 1982).

According to the social constructivist theory of learning, in the particularly complex setting of the PBL training, students need enabling interactions of group members among themselves and with the tutor. However, they also need autonomy in their intrinsic motivation and opportunities, to challenge their own strengths (MacKinnon, 1999). In this regard, tutors need to be extremely cautious when providing feedback to empower and protect all the motivational regulators of the PBL tutorial. Deciding the precise amount, timing, frequency and composition of the feedback to be provided to students requires skilful decision by the tutors. On the other hand, the lack of feedback could fail to keep motivation by changing the learning perceptions and, probably, also the learner's goals. Similarly, too much feedback could interfere with both the autonomy of student's learning and the need for learning challenge (Schmidt, Rotgans & Yew, 2011).

The issue of the interactive feedback for PBL tutorials is also related to the motivational and transferable value of the feedback whereby the tutors' facilitation is required to create an adequate learning environment whilst the students maintain control of their own learning (MacLellan, 2001; Scott, Badge & Cann, 2009).

One important aspect that characterizes the tutor-student interactions in PBL lies in their roles. Students are the drivers of their own learning process and knowledge construction as individuals and as a group whilst tutors are responsible for guiding and scaffolding the students' learning (MacKinnon, 1999; Entwistle, 2009).

PBL tutors' are expected to exert their role by providing students with the appropriate formative feedback to coach their progress through the tasks. The high complexity of both, the tasks and the social interactions, common to PBL also implies the need for tutors' guidance on different aspects of the tasks, the task processing and the group interactions. In terms of PBL tutors' feedback plays a valuable role in the learning process but it also brings many challenges which influence its effectiveness.

Since tutor feedback is considered crucial to guide students' learning in PBL it is understandable that any barrier to its effective use by the learners could be detrimental for their learning progress. Such interferences must be identified, understood and corrected to prevent dysfunctions in the PBL process.

The present study explored the learners' perceptions on the feedback received from their tutors and identified some existing challenges to its effective use. This study found difficulties in feedback processing arising from three major factors: the students, the tutors and the curriculum design.

From the students' side, their awareness and understanding of their central role as regulators of their own learning in PBL is important. The student's perception that there are influencing differences in the facilitation by tutors according to their discipline background and tutoring expertise is corroborated by the theory of Hattie and Timperley (2007) where the tutor, seen by students as a role model, enables their interactions during facilitation.

Learning experiences require the students to identify their learning needs, to set their own learning goals and find their ways to reach them. This understanding implies that the tutors' participation must not be directive but rather to coach them by providing hints or questions to promote their need for new knowledge (MacKinnon, 1999; Entwistle, 2009).

Students also need to engage in reflective practice on how they learn and depending on the success of the different task-approaches used they could validate the approach and develop their own learning skills.

Thus, in this process, they do not only learn but they also identify the best approach to solve the tasks. The approaches successfully validated by the learners are then likely to be used again when facing a similar problem. Since the students' learning skills, in PBL, are expected to emerge from a systematic and repetitive process of problem-solving, the formative assessment plays a key role in guiding students in the attainment of the learning goals. In consonance, the feedback generated from the formative assessment in PBL is also considered crucial for the learning success (MacKinnon, 1999; Hattie & Timperley, 2007;

Entwistle, 2009). It has been largely agreed that the development of self-regulated motivational learning and problem-solving skills inherent to the PBL is likely to induce the development of life-long learning skills, to be owned and used by the individual systematically and forever (Schmidt, Vermeulen & van der Molen, 2006; Schmidt, Rotgans & Yew, 2011)

In addition to Vygotsky's and Piaget's contributions, also fundamental in the context of PBL, is the principle of the reflective learning during process of knowledge construction. According to Kolb's theory of experiential learning (Kolb, 1984), reflective practice occurs in a cyclic sequence, which starts with the individuals' concern or feeling about their actions followed by evaluation of the good and bad about that experience, then analysing it to make sense of what happened, and finally reaching conclusions, exploring new alternatives and making a plan of action so that next time facing the same activity the outcome will be better.

Hattie and Timperley (2007) also suggested that in the settings of PBL, with the increasing complexity of the tasks it was also beneficial to increase the delay in the feedback. Such delay provided the time for the students to introspect and reflect on their own conceptions on how they learn.

Black and William, in 1998, also advocated that the correction of errors did not happen immediately after feedback; because the stimulation to approach correction requires some time for the learner to experience sufficient critical thinking and reflection on their learning and goals before they could reach a level of self-stimulation or motivation strong enough to initiate a corrective action.

Brown, Collins & Duguid (1989), also agreed that the feedback delay after attempting a complex task provided the time for the learners to develop their self-perceived need to improve. This theory of critical time required for the reflective learning to occur was also defended by Entwistle & Peterson (2004) and Irons (2007).

This theory, further developed by Donald Schön underlines the importance of the students' conscious engagement in the reflection on how they learn, thus highlighting the metacognitive function of the formative assessment and feedback (Schön 1983, p 128-167). The conception that student's learning occurs during an active, reflective and individually regulated processing is the key to achieve high quality learning under the student-centred and self-regulated conditions of PBL (Savery & Duffy, 1995).

In the context of the social cognitive constructivism attributed to PBL the sum of the various contributing components has been conceptualized as the "Learning Environment or Learning

Climate" which determines the quality of learning (Roff & McAleer, 2001). The three main elements of the Learning Environment are: (1) the resources or physical environment such as available facilities, comfort and safety; (2) the intellectual climate which is supported by learning with patients, based on evidences and updated knowledge and (3) the emotional climate arising from the motivational support, the use of reinforcement and positive methods.

The satisfaction of self-attainment associated with that learning reinforces the students' motivation to learn. Subsequently, this processing can be assimilated into their learning routine becoming a transferable learning skill.

The transferability of the feedback, also known as 'feed-forward effect', is widely considered to be one of the more beneficial principles of adult work-based training, when compared to the old traditional method; which concentrates more on knowledge acquisition than on the learning itself (Crossan, Lane & White, 1999). The transferable value of the feedback has also been recognized and attributed to the undergraduate and postgraduate training using PBL approach by Irons (2007).

Students must also engage in the group processing needed for their construction of new knowledge, promoting cooperative group learning and developing team-work skills.

On the tutors' side their understanding of the theoretical principles and complexities of PBL is also important. The PBL approach to learning has been proven to foster deep and meaningful learning since it allows learners to engage in constructing their own knowledge. However, the learning success in instructional programs using the PBL also requires extensive tutors' scaffolding and guidance to support students' learning on how to approach the task and why should a specific approach be used.

A conscious and careful engagement of the PBL tutors is essential. On one hand tutors must avoid direct teaching to enable students develop their own sense-making skills, to articulate their thinking and to reflect on their own learning. On the other hand tutors should scaffold students learning by providing hints on specific thinking strategies and actions required by the different disciplines. PBL tutors also scaffold students learning by sharing their experiences and conveying some expert guidance. Tutors' guidance is also needed to help students to extract the framework for complex tasks helping them to keep the focus on what they need to do or learn and thus reducing the cognitive load (Hmelo-Silver, Duncan & Chinn, 2006).

PBL training involves the learners' engagement in tasks with higher level of complexity than their acquired abilities. The scaffolding provided by the tutors' feedback helps students to

break down very complex, otherwise inaccessible tasks, into more manageable ones that are within the student's zone of proximal development.

PBL as a constructivist learning approach requires social interactions based on communication, respect and understanding. This is an essential premise when it comes to tutor-student(s) for the provision and exchange of formative feedback, as these interactions are the base of the social validation of the learners' new perspectives that lead to their individual construction of new knowledge. Another important aspect to consider in terms of social relationships in PBL from both the learners and the tutors is the fact that the time required for the individuals to adapt and interact with other individuals could vary from person to person.

Regarding content and function of feedback, it is important that the message provides clear guidelines for improvement in areas of difficulties as well as to keep a balance of the positive aspects to reinforce the learners' attainment and motivation to learn (Black & William, 1998).

Tutors must also be aware and careful about the nature of the feedback they provide to students in terms of timing, clarity, complexity, language used and emotions evoked (Hattie & Timperley, 2007). Deficiencies in the nature of the PBL feedback may lead to loss of motivation to learn and to attempt the required changes for improvement. Hattie and Timperley in 2007 published a description of how inconsistent feedback can lead to multiple types of affective conflicts in the student inducing changes in their individual goals, as well as in their personal and social representations. The loss of motivation resulting from this situation interferes with the student-centred need for learning which is key to PBL. The learner's motivational disengagement hampers the self-centred self-directed learning environment required in PBL. These changes in motivation and learning environment could result in students' adoption of a different learning approach making the PBL dysfunctional. The effects of such affective conflicts associated with inconsistent feedback have also been described by Hattie and Timperley (2007), Walker & Leary (2009) and Weaver (2006). According to Young (2000) the effectiveness of feedback also depends on the motivational needs and level of self-esteem of the students. When students with low motivation and high self-esteem are given feedback that is balanced but focused to the self-person they are more likely to ignore the negative component. Failure to reach a sufficient level of motivation could result in this feedback experience becoming rather frustrating for the learner.

The results of this research also suggest that special attention must be conferred to the frequency of the feedback. Tutors must be aware of the delay recommended for the provision of feedback according to the complexity of the tasks dealt with. The timing of the

feedback delay is critical to allow the learners attempt and complete the task solving and also to engage in critical thinking reflecting on how they did it thus developing their learning skills.

The success of PBL also requires institutional awareness of tutors' functions and expectations as well as support for tutor training and resources to enable them to meet the expectations from both the learners and the professions, which should not be limited to knowledge but also on how to learn and how to interact with health care team.

However, it is not only the selection of the problems or cases but also the ability of the tutors to enable the students' learning via problem solving-motivation throughout the case/problem.

It is the role of the PBL tutors to guide students to promote Integration and application of the problems as the key to engender transferable problem-solving skills and motivate students' critical thinking. In this study we found that when the students' learning was not concentrated on problem-solving or case approach the students were more likely to just do and present learning issues without much of understanding or application. In this sense, a failure to maintain case/problem-based motivation would not provide the development of transferable learning skills expected from PBL.

Hendry et al. in 2006 also found that tutors with basic sciences background are more likely to rely on their field expertise whilst clinical tutors are more likely to follow the tutor's guide. These differences were attributed to the power of the preferred didactic approach by the various disciplines. They also found that with the increasing teaching expertise of the tutors it is more likely that students will perceive his or her accomplishment of the students' support and tutorial facilitation as effective. Groves, Régo & O'Rourke (2005) also found that tutors with a clinical background commonly use their clinical expertise to enhance the learners' motivation when engaging in facilitation.

It is also important that the assessment methods correspond to the PBL principles with assessment practices that concentrate more on understanding than on the amount or depth of knowledge. The observation of this principle is the key for the students to deal with the huge amount of knowledge accumulated by mankind by selecting what is more relevant to their learning needs and feel that the learning load is reachable.

In the context of this research another possible fact influencing the overload felt by the students, is that Walter Sisulu University belongs to the so-called Historically Disadvantaged Institutions (HDIs) in South Africa. Thus, WSU, is not exempted from the common constrains faced by higher education institutions in terms of human and material resources. Roff &

McAleer (2001), in a similar context, also described the lower efficacy of overloaded tutors resulting from institutional staffing constraints; as well as the suboptimal learning environment emanating from resource limitations faced by the educational institution. The negative effect of the above-mentioned constraints, in the context of this study, could partly contribute to our students' dissatisfaction with tutors' feedback.

The socioeconomic disparities which still affect WSU give rise to periodic protests led by students, staff or both. It is possible that such aspects of the learning environment could be contributing to the suboptimal timing and regularity in the provision of tutor's feedback to students in the context of this research.

In the case of WSU during the last decade it has been a regularity that students' marches occur during the first trimester of the year, disrupting the academic activities for at least a few weeks. These disruptions also occurred during block I of academic period included in the present research. Thus, in addition to the feeling of learning overload described by the students in the MBChB III, it is also possible that uneasiness in the campus climate during these periods deters the learning environment also delaying the learners' adaptation. On top of that, the modular structure of the MBChB III courses puts more stress on the students to learn and prosper academically in a shorter time. It is likely that these specific curricular aspects in the context of this research are responsible for the students' recommendation of receiving an intense orientation phase from the tutors at the beginning of the MBChB III. This type of extended orientation phase proposed by the participants would require a change of the tutor's role from being the facilitator to being the driver of the process. The resulting switch of roles might be detrimental for the specific motivational dimensions and learning benefits inherent in PBL (MacKinnon, 1999; Entwistle, 2009). However, the students' need for deeper coaching in the beginning of the year could arise from the fact that the MBChB III consists of a mix of pre-clinical and clinical disciplines.

The excessive workload has been described to have an unfavourable effect on the learning success and academic progress (Entwistle & Peterson, 2004). The affective state associated with inability to cope and progress usually induces changes in the learners' motivational goals and learning approaches. Although switching to surface approach and strategic learning could result in academic progress, it would lower the quality of the learning (Entwistle, 2009; Gijbelsa & Dochyb, 2006). Similar effects of such emotional conflicts have also been described by Genn, 2001; and Jamaiah, 2008.

Also imperative during the curricular planning of the learning activities is the allocation of sufficient time for students to conduct meaningful self-directed learning in preparation for the PBL exercises. This time is needed for them to engage in the discovery of new facts from the different resources available, to contrast them with their previously existing knowledge and to acquire new perspectives which then need validation via social interactions to be converted into new knowledge.

It is also vital that the curriculum provides the student with a guide of expected outcomes in terms of level of attainment rather than prescribing learning issues or setting specific depths of knowledge.

Another issue that requires careful planning in the PBL curriculum is the course design. The decision of structuring the courses in the form of modules, semesters or year courses must take into consideration the time required for the students to gain the insight on how to structure their learning in specific disciplines, to discover and validate by themselves, through repetition of learning cycles, the best approach to match their learning goals with the professional expectations of the course. Regarding the learning load generated by introducing disciplines which are completely new for the students it has also been reported Hmelo-Silver, Duncan & Chinn (2007) that this process implies an additional cognitive workload at least until the time they are able to incorporate the discipline thinking in their learning routine. The short duration of a course may constitute an additional source of stress for students who must face a summative assessment before becoming acquainted with the essential processing. This situation may lead to frustration and loss of motivations in the learners.
This perception of a learning load that is “unreachable” may result in the learners’ disengagement from the deeper approach to learning and poor learning development. This perception may also induce the students’ need for additional tutors’ coaching and even the need for the tutors to switch roles to actively direct their learning process. Failure to maintain the student-centred and self-directed motivation and learning would constitute a failure to generate the constructivist learning environment essential to PBL (Lim, 2012).

In addition, the curriculum design must be supported by the required human, material and learning resources to enable PBL roles of the tutors and the students in an overall learning-conducive environment (Brown, Collins & Duguid, 1989; Irons, 2007; Jamaiah, 2008). Special effort must be made to prevent the communication failure that could arise from differences between the instructional language selected and the primary or preferred language by both the students and the tutors. An appropriate level of communication is

essential to engage in social interactions required for the effectiveness of both, the tutors' scaffolding/support and the students' learning (Lave & Wenger, 1991).

Finally, although in the PBL settings the need for resources to facilitate learning is considered to be high (Entwistle & Peterson, 2004), and despite the resource limitations faced by our educational institution, in the present study the participants did not identify this issue in their recommendations. This finding could be explained, at least partly, by a shortage of time for self-directed learning in the program timetable. In the face of restricted time for preparation between the two tutorial sessions, it is less likely that students would even attempt the extensive use of additional resources. This view is supported by a range of variable effects of different resourcing models, on the students' learning, as described by Barrows in 1986.

The above curricular implications for PBL support the need for the whole PBL curriculum to be under constant inquiry and renovation by the teachers and the institution to ensure its constructive alignment. This process must include the evaluation from students, faculty and future employers as the main stakeholders taking part. It involves matching the development of learning outcomes to a valid and reliable assessment strategy and responsible teaching practices (Biggs, 2003).

In a broader scope, possible implications of some elements of the learning environment including campus climate, particularities arising from specific institutional agendas and sociocultural roots as well as limitations in resources must be considered as they can affect the outcome of the PBL and the overall efficacy of academic enterprise. Hence, factors arising from a deeper social, cultural and political background, such as those common to "historically black or historically disadvantaged institutions", also require some contextual reflection and action by the educators.

In summary, in this chapter, the difficulties perceived by the students as interfering with their effective use of tutors' feedback were discussed in the light of the theoretical background of the problem-based learning as a constructivist approach to learning.

The highlighted influences were corroborated against the principles of the social constructivist learning theory as theoretical ground conditioning the success of PBL.

The importance of tutors' feedback to support students not only with guidelines to improve but also with learning motivation and scaffolds for learning approach in specific disciplines was emphasized. The different attributes of tutors' feedback regarding its content and

presentation were valued as essential to enable student's learning and development of transferable learning skills.

The different factors identified to interfere with the efficient use of the tutorial feedback were discussed from the perspectives of the students and the tutors in a social constructivist learning environment. However, the analysis did not only look at the quality of the feedback itself, but at the whole curriculum and course design as well.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS:

The introduction of PBL in the educational system is a global trend and South Africa is no exception. There is an increasing trend to introduce PBL at the various levels of the national educational platform which is quite strongly displayed specially in higher education. In the specific field of health sciences education the general migration to the use of PBL approach as the strongest method for promoting the development of learning skills resulting in more efficient graduates is inevitable.

However, the implementation of PBL is not a problem-free task. Although different PBL models can be suitable for the various school settings, the institutions and educators must still ensure that the essence of the process responds to the accepted principles and theories which engender the higher quality learning intrinsic to PBL.

This research, based on data collected during four focus groups with MBChB III students at Walter Sisulu University, provided a deep insight into the students' perceptions of the intention, values and utility of the verbal formative feedback provided by their tutors during the tutorial sessions, as well as the their expectations from the tutor's feedback and their views on how to make the process more effective.

The students perceived the value of feedback as a powerful tool for them to guide and regulate their own learning and to develop their learning skills. They also recognize the transferable value of the learning skills developed for processing new learning whenever required in the future, for the rest of their lives.

The effective use of the tutor's feedback by students depends, largely, on the tutor's skills to elaborate and deliver the feedback message for each specific tutorial task. However, a balanced, supportive and motivating learning environment is also needed for a productive feedback practice.

At large, the success of a PBL program also depends on the overall curriculum design. Curricular issues such as the selection and construction of cases/problems, the matching of the learning and assessment activities, the scheduling of enough time for students' self-directed learning, and the selection of the most appropriate structure and duration of the

courses, seem to be important to enable the fundamental basis of the PBL pedagogy. It is suggested that the association of these factors is investigated in future studies.

The feedback effectiveness depends on its content and its presentation, to be able to stimulate the students' motivation to learn. The use of suboptimal feedback practices by tutors can induce affective conflicts in the students thus interfering with their learning process and progress.

Tutors must be well aware of the principles of PBL as a constructivist learning approach to be able to engage in community and partnership with students while preserving and empowering the students' ownership of the process and learning autonomy to facilitate their reflective practice.

In the settings of PBL tutorials, there is no single model of feedback that could always satisfy the students' needs. Hence, the tutor must be able to select the most appropriate practice for the type and complexity of each of the different tasks being attempted. Tutors' training is essential to gain awareness and expertise in the handling of different feedback practices.

Providing students with detailed and clear learning outcomes enables them to make a meaningful translation of the feedback messages and facilitates their learning success. Hence, the more complex tasks could benefit from the regular provision of descriptive, criterion-referenced feedback with guidelines. These findings also provide the insights for future research.

The students' perceptions identified in this study can be generalized to other universities with similar programmes and similar socio-economic conditions to Walter Sisulu since most of them are arising from the intrinsic nature of the PBL approach to learning.

RECOMMENDATIONS:

The educational institution should become aware of the need for training of tutors in the different aspects and practices of the feedback in the specific settings of the small group tutorial as way to attain a higher overall quality of learning. This issue should be reflected in the institutional Professional Development Programmes.

The training and awareness of students on the factors, processes and principles of the training using PBL approach should be intensified in the orientation sessions from the beginning of their exposure to PBL and continued along their progress through the instructional program.

External factors limiting to the effective use of feedback and learning success in PBL such as: shortage of staff and resources, excessive workload on staff and students and structural model of the courses should be identified and consequently addressed by the educational institution to diminish as much as possible its negative impact on students' learning.

The educational institution in partnership with the MBChB III tutors should develop specific guidelines to ensure the provision of a standardised and consistent level of tutorial feedback to enable the students to attain the highest possible quality of learning.

Additional research is recommended to investigate the level of competence of the PBL trainees in the processing and use of feedback to corroborate that their perception of the value and utility of feedback corresponds to their engagement in specific actions and behaviours towards improvement.

Additional research regarding tutors' perceptions of feedback in PBL tutorials is also recommended for consideration in relation to students' perceptions recorded in this research in order to identify the actual level of intervention required for improvement.

A regular process of curriculum enquiry is required to ensure the constructivist alignment of the different curricular components and overall design as a condition to the successful implementation of PBL.

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APPENDIXES

APPENDIX 1

CONSENT FOR PARTICIPATION IN A FOCUS GROUP

The Stellenbosch University (SUN) and Walter Sisulu University (WSU) are conducting a project concerning implementation details of PBL in the MBChB programme at WSU.
We would like you to participate in a guided group discussion called a "focus group." This invitation is extended to the whole 2010 MBChB III class. The questions asked are related to the tutorial process used in the MBChB programme.

This project is being conducted by the WSU & SUN Faculties of Health Sciences represented by Prof. EV Blanco-Blanco as principal investigator.

By signing this form:
1. I understand that there is no physical or emotional harm in participating in this group discussion. The benefits are an increased faculty awareness of the details of the program implementation.

2. I will not share outside the group any information shared by other participants about themselves, or their identity.

3. The group discussion will last about 90 minutes. It will be conducted within the teaching facilities of the Nelson Mandela Drive campus at WSU.

4. I agree to allow the research team to audio-record the group discussion. This is to make sure that the information reflects what was said by me and other participants. Tape recordings will be kept for 1 year, and then destroyed. All information obtained will be kept confidential and in secure files only accessible to the research team, study auditors and to the relevant Human Research and Ethics Committees.

5. I have the right to withdraw from the group even if it has not finished. My refusing to participate will not involve a penalty or loss of any benefits to which I am eligible.

6. I understand that I will never be identified by name with anything I say or do during this meeting by the project administrators. None of the information shared with the group will have my name or any other identifying personal information.

7. I understand there will be no compensation and/or payments by the institution for my participation and that I am not liable to any expenses out of my pocket.

8. I freely and voluntarily agree to participate in this group.

9. A research team member must have explained the need for this study, and the risks in participating. He or she has offered to answer any questions which I may have. I understand that I may keep a copy of this consent form for my own information.

Legal and Ethical Warning. The procedures used in this study have been subject to review and approval by the Human Research Ethics Committees (HREC) of the Faculties of Health at WSU and SUN in compliance with the international declaration of Helsinki and the ethical codes for research on human subjects.

(HREC Permit Numbers: WSU 017/010 SUN N09/12/352)

You have the right and the opportunity to consult either directly or anonymously with these committees and the project administrators using the following contact details:

Prof. EV Blanco-Blanco (Principal Investigator): 082 200 7554 / 047 502 4952
eblanco-blanco@wsu.ac.za

WSU HREC: ggeorge@wsu.ac.za; mkayongo@wsu.ac.za; ndabata@wsu.ac.za
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_____ _____
Volunteer/Participant (Signature and Date) (Print Name)

_____ _____
Witness (Signature and Date) (Print Name)

_____ _____
Prof. EV Blanco-Blanco (Principal Investigator) (Print Name)
(Signature and Date)